

## BASELINE OPTION

July 25, 2018

Exhibit 19

The Baseline Option provides the overall scope and an order of magnitude project cost to provide new stand-alone space for all six laboratory facilities considered as part of the study. In this scheme, it is assumed that all six departments are co-housed in new construction and all existing spaces vacated by those departments are left in their existing condition with no renovation. For the purposes of establishing the baseline option, it is assumed that all funds associated with readying the vacated spaces for use by other programs would come from a different budget than that intended for design, construction, furnishings and soft costs associated with the new construction. The Baseline Option is not intended to be a recommendation of this study. It is instead an accounting of the total scope and requested space for all six facilities to be used for comparison purposes against the recommended options that appear later in this document.

### GENERAL SCOPE

To establish the Baseline Option, it was assumed that all requested space would be provided in a new building on a green field site yet to be determined. The list below includes the existing net square footage, proposed new square footage and growth for each facility.

	Existing Net SF	Proposed Net SF	Growth- Net SF
Dept. of Livestock Veterinary Diagnostic Laboratory	11,549	27,535	15,986
Wool Laboratory	4,781	4,315	(466)
FWP Wildlife Laboratory	2,992	5,159	2,167
Dept. of Ag Analytical Laboratory	6,708	7,877	1,169
Seed Laboratory	1,763	2,498	735
Pulse Crops Laboratory	751	3,404	2,653
Total	28,544	50,788	22,244

A net to gross conversion of 55% has been assumed for all space that is proposed to receive new construction. After the net to gross conversion, the total scope for the baseline is approximately 92,000 gross square feet. A complete breakdown of all space included in each department appears on the following pages along with the net to gross conversion and estimated cost per gross square foot.

### VACATED SPACE

Under the Baseline Option, all existing space currently housing the six laboratories would be made available for other uses. The following shows the amount of net square footage that would be vacated in each of the four buildings that presently house the six laboratories under consideration. As previously stated, no costs have been provided for retrofit or repurposing of these facilities.

Wool Lab	4,781 nsf
FWP Wildlife Laboratory	2,992 nsf
McCall Hall	6,708 nsf
Marsh Laboratory	14,063 nsf
<b>Total</b>	<b>28,544 nsf</b>

### CONSTRUCTION AND PROJECT COSTS

Line item costs shown in the attached room list were established based on national databases, our internal database and recent experience in the region. The costs are expressed in dollars per gross square foot and vary for each general space based on expected level of finish, fixed furnishings and complexity of engineered systems. These line item costs express our opinion of direct construction costs for that particular space as well as aggregate associated construction costs such as associated mechanical room space, vertical and horizontal circulation and engineered equipment. The line item costs do not include site work, utilities, contingency or escalation which are added as separate line items at the bottom of the tabulation to yield a total construction cost. The project has been escalated at 4% to an assumed mid-point of construction in the Summer of 2020. Note that site work and utilities have been given a place holder value of \$2 million and \$1 million respectively. At this time, a site has not been chosen and those costs cannot be estimated with specificity. A project soft cost burden of 25% has been assumed in consultation with the Montana State Architecture and Engineering Division and would include consultant fees, management fees, commissioning, loose furnishings and other non-construction costs. As shown on the attached room list, the Baseline Option presently shows a total project cost of approximately \$59,900,000.

SPACE SUMMARY		Existing Area (Net)		Proposed Area (Net)		Proposed Area (Gross)		Estimated Cost			
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
<b>1.0</b>	<b>VETERINARY DIAGNOSTIC LAB</b>										
1.1	Receiving/Accessioning		424			1,573	1,149		2,860		\$ 940,500
1.1.1	Walk-In Samples			1	363	363	363	55%	660	\$ 300	\$ 198,000
1.1.2	Conference Room			1	242	242	242	55%	440	\$ 300	\$ 132,000
1.1.3	Unisex Restroom			1	121	121	121	55%	220	\$ 350	\$ 77,000
1.1.4	Delivery and Night Drop-Off Vestibule	076A	33	1	121	121	88	55%	220	\$ 325	\$ 71,500
1.1.5	Processing & Accessioning	078	391	1	726	726	335	55%	1,320	\$ 350	\$ 462,000
<b>1.2</b>	<b>Necropsy &amp; Prep</b>		2,623			4,599	1,976		8,362		\$ 4,862,909
1.2.1	Necropsy Receiving	082	801	1	363	363	-438	55%	660	\$ 400	\$ 264,000
1.2.2	Live Animal Holding	082	115	1	363	363	248	55%	660	\$ 400	\$ 264,000
1.2.3	Tissue Trimming / Formalin Prep	078A	117	1	242	242	125	55%	440	\$ 450	\$ 198,000
1.2.4	BSL-2 Necropsy	081	622	1	1,089	1,089	467	55%	1,980	\$ 750	\$ 1,485,000
1.2.5	Evidence Storage	082	90	1	121	121	31	55%	220	\$ 400	\$ 88,000
1.2.6	Photography & Drug Storage			1	242	242	242	55%	440	\$ 400	\$ 176,000
1.2.7	Outgoing Cooler	082A	94	1	182	182	88	55%	331	\$ 500	\$ 165,455
1.2.8	Incoming Cooler w/ nightdrop	082A	94	1	182	182	88	55%	331	\$ 500	\$ 165,455
1.2.9	Lockers, Shower, Gowning & Boot Room	079A, 080A	330	1	1,089	1,089	759	55%	1,980	\$ 550	\$ 1,089,000
1.2.10	Necropsy Storage			1	121	121	121	55%	220	\$ 400	\$ 88,000
1.2.11	Incinerator	082	360	1	484	484	124	55%	880	\$ 900	\$ 792,000
1.2.12	Formalin fixed storage		0	1	121	121	121	55%	220	\$ 400	\$ 88,000
<b>1.3</b>	<b>Laboratory Sections &amp; Support</b>		5,668			12,043	6,375		21,896		\$ 9,121,364
<i>Clinical Pathology 1.3.1</i>											
1.3.1.1	Clinical Pathology Laboratory	088	382	1	726	726	344	55%	1,320	\$ 400	\$ 528,000
1.3.1.2	Clinical Pathology Equipment Room			1	121	121	121	55%	220	\$ 350	\$ 77,000
1.3.1.3	Clinical Pathology Microscopy Room			1	121	121	121	55%	220	\$ 400	\$ 88,000
<i>Histology 1.3.2</i>											
1.3.2.1	Histology Laboratory	096	409	1	726	726	317	55%	1,320	\$ 400	\$ 528,000
1.3.2.2	Histology Equipment Room	096A	65	1	182	182	117	55%	331	\$ 350	\$ 115,818
1.3.2.3	Histology Slide/Block Storage	067, 97A	152	1	363	363	211	55%	660	\$ 350	\$ 231,000
<i>Bacteriology 1.3.3</i>											
1.3.3.1	Bacteriology Laboratory	087	584	1	726	726	142	55%	1,320	\$ 400	\$ 528,000
1.3.3.2	Bacteriology Dirty Room	084	284	1	121	121	-163	55%	220	\$ 400	\$ 88,000
1.3.3.3	Bacteriology Microscopy			1	121	121	121	55%	220	\$ 400	\$ 88,000
1.3.3.4	Bacteriology Equipment	086	81	1	182	182	101	55%	331	\$ 350	\$ 115,818
<i>Virology 1.3.4</i>											
1.3.4.1	Virology Laboratory	090, 093	452	1	726	726	274	55%	1,320	\$ 400	\$ 528,000
1.3.4.2	Virology Fluorescent Microscopy	092	23	1	121	121	98	55%	220	\$ 400	\$ 88,000
1.3.4.3	Virology Equipment Room	091	90	1	182	182	92	55%	331	\$ 350	\$ 115,818
1.3.4.4	Virology Clean Room			1	121	121	121	55%	220	\$ 400	\$ 88,000
1.3.4.5	Virology Dirty Room			1	182	182	182	55%	331	\$ 400	\$ 132,364
<b>1.3.5</b>	<b>Serology 1.3.5</b>										
1.3.5.1	Serology Laboratory	094	608	1	726	726	118	55%	1,320	\$ 400	\$ 528,000
1.3.5.2	Serology Centrifuge & Liquid Handling			1	182	182	182	55%	331	\$ 400	\$ 132,364
1.3.5.3	Serology Equipment Room			1	182	182	182	55%	331	\$ 350	\$ 115,818
<i>Molecular Diagnostics 1.3.6</i>											
1.3.6.1	Molecular Diagnostics Sample Prep			1	363	363	363	55%	660	\$ 400	\$ 264,000
1.3.6.2	Molecular Diagnostics Extraction	116	346	1	363	363	17	55%	660	\$ 400	\$ 264,000
1.3.6.3	Molecular Diagnostics Clean Room	116B	181	1	182	182	1	55%	331	\$ 400	\$ 132,364
1.3.6.4	Molecular Diagnostics Amplification	112	257	1	182	182	-76	55%	330	\$ 400	\$ 132,000
1.3.6.5	Molecular Diagnostics Freezer Room			1	121	121	121	55%	220	\$ 350	\$ 77,000
1.3.6.6	Molecular Diagnostics Storage	116F	68	1	121	121	53	55%	220	\$ 350	\$ 77,000
<i>DNA Sequencing 1.3.7</i>											
1.3.7.1	DNA Sequencing Laboratory Suite			1	726	726	726	55%	1,320	\$ 400	\$ 528,000
<i>Milk 1.3.8</i>											
1.3.8.1	Milk Laboratory	095	603	1	1,089	1,089	486	55%	1,980	\$ 400	\$ 792,000
1.3.8.2	Milk Laboratory Equipment			1	363	363	363	55%	660	\$ 350	\$ 231,000
<i>Food Safety 1.3.9</i>											
1.3.9.1	Food Safety Laboratory			1	726	726	726	55%	1,320	\$ 400	\$ 528,000
1.3.9.2	Food Safety Sterilization & Equipment			1	121	121	121	55%	220	\$ 600	\$ 132,000
<i>Shared Laboratory Support 1.3.10</i>											
1.3.10.1	Sterilization, Glassware & Pure Water	73	717	1	726	726	9	55%	1,320	\$ 750	\$ 990,000
1.3.10.2	Media Prep Lab	073	100	1	121	121	21	55%	220	\$ 400	\$ 88,000
1.3.10.3	Biohazard Sterilization	075A	81	1	121	121	40	55%	220	\$ 750	\$ 165,000
1.3.10.4	Freezer Farm			1	363	363	363	55%	660	\$ 350	\$ 231,000
1.3.10.5	Hazardous Waste	082	115	1	242	242	127	55%	440	\$ 400	\$ 176,000
1.3.10.6	Laundry Room	075	70	1	121	121	51	55%	220	\$ 300	\$ 66,000
1.3.10.7	Chemical Storage			1	182	182	182	55%	330	\$ 400	\$ 132,000
<b>1.4</b>	<b>Biocontainment</b>		0			2,360	2,360		4,291		\$ 3,185,091
1.4.1	Lockers, Shower, Gowning & Boot Room			1	363	363	363	55%	660	\$ 550	\$ 363,000
1.4.2	Autoclave Sterilization			1	182	182	182	55%	331	\$ 650	\$ 215,091
1.4.3	Equipment Decontamination Airlock			1	121	121	121	55%	220	\$ 650	\$ 143,000
1.4.4	BSL-3 Laboratory			1	726	726	726	55%	1,320	\$ 800	\$ 1,056,000
1.4.5	BSL-3 Specialized Laboratory			2	121	242	242	55%	440	\$ 800	\$ 352,000
1.4.6	BSL-2 Enhanced Necropsy			1	726	726	726	55%	1,320	\$ 800	\$ 1,056,000
<b>1.5</b>	<b>Office &amp; Support</b>		2,834			6,960	4,126		12,655		\$ 3,582,909
1.5.1	Reception and Waiting	077	570	1	800	800	230	55%	1,455	\$ 280	\$ 407,273
1.5.2	Director Office	083B	116	1	140	140	24	55%	255	\$ 280	\$ 71,273
1.5.3	Associate Director Office			1	120	120	120	55%	218	\$ 280	\$ 61,091
1.5.4	Administrative Conference Room			1	300	300	300	55%	545	\$ 280	\$ 152,727
1.5.5	Business Manager Office			1	120	120	120	55%	218	\$ 280	\$ 61,091
1.5.6	Quality Manager Office	097	215	1	120	120	-95	55%	218	\$ 280	\$ 61,091
1.5.7	Pathologist Office	083A, 114	256	4	120	480	224	55%	873	\$ 280	\$ 244,364
1.5.8	Open Office			25	60	1,500	1,500	55%	2,727	\$ 260	\$ 709,091
1.5.9	Library/Rounds Room	083	122	1	300	300	178	55%	545	\$ 280	\$ 152,727

**State of Montana**  
**Combined State Lab Study**  
**June 6, 2018**



**Baseline Option**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
1.5.10	Conference Room			2	120	240	240	55%	436	\$ 280	\$ 122,182
1.5.11	Multipurpose/Seminar Room	060	629	1	800	800	171	55%	1,455	\$ 300	\$ 436,364
1.5.12	Break Room	101	300	1	500	500	200	55%	909	\$ 300	\$ 272,727
1.5.13	Shipping			1	120	120	120	55%	218	\$ 300	\$ 65,455
1.5.14	Staff Lockers			1	300	300	300	55%	545	\$ 450	\$ 245,455
1.5.15	Storage	075	318	1	1,000	1,000	682	55%	1,818	\$ 250	\$ 454,545
1.5.16	Server Room	100	308	1	120	120	-188	55%	218	\$ 300	\$ 65,455
Subtotal - Veterinary Diagnostic Lab				11,549		27,535	15,986		50,064		\$ 21,692,773
2.0	WOOL LAB										
2.1	Wool Lab		4,781			4,315	-466	7,845		\$ 2,222,618	
2.1.1	Receiving Garage & Sample Storage	008, 010	1,563	1	1,452	1,452	-111	55%	2,640	\$ 200	\$ 528,000
2.1.2	Analytical Laboratory	102	292	1	363	363	71	55%	660	\$ 400	\$ 264,000
2.1.3	Wet Chemistry Laboratory	001, 003, 004	1,090	1	484	484	-606	55%	880	\$ 430	\$ 378,400
2.1.4	45-Person Classroom	101	458	1	908	908	450	55%	1,651	\$ 325	\$ 536,545
2.1.5	Director Office	107	157	1	140	140	-17	55%	255	\$ 280	\$ 71,273
2.1.6	Open Office	108	238	1	242	242	4	55%	440	\$ 260	\$ 114,400
2.1.7	Storage	002, 103, 105, Attic	825	1	726	726	-99	55%	1,320	\$ 250	\$ 330,000
2.1.8	Vacated Office	106	158	1	0	0	-158	55%	0	\$ -	\$ -
Subtotal - Wool Lab				4,781		4,315	-466	7,845		\$ 2,222,618	
3.0	FWP WILDLIFE LAB										
3.1	FWP Wildlife Lab		2,992			5,159	2,167	9,380		\$ 3,901,909	
3.1.1	Reception & Open Office		470	1	242	242	-228	55%	440	\$ 280	\$ 123,200
3.1.2	Director Office		90	1	140	140	50	55%	255	\$ 280	\$ 71,273
3.1.3	Staff Office		272	2	120	240	-32	55%	436	\$ 260	\$ 113,455
3.1.4	Open Office / Seasonal Labor		0	4	60	240	240	55%	436	\$ 260	\$ 113,455
3.1.5	Break Room			1	121	121	121	55%	220	\$ 280	\$ 61,600
3.1.6	Work Room			1	121	121	121	55%	220	\$ 250	\$ 55,000
3.1.7	Office Storage Room			1	121	121	121	55%	220	\$ 280	\$ 61,600
3.1.8	Lockers, Shower, Gowning & Boot Room		280	1	484	484	204	55%	880	\$ 550	\$ 484,000
3.1.9	Sample Prep		221	1	242	242	21	55%	440	\$ 400	\$ 176,000
3.1.10	Necropsy		400	1	726	726	326	55%	1,320	\$ 750	\$ 990,000
3.1.11	Holding Cooler		135	1	182	182	47	55%	331	\$ 500	\$ 165,455
3.1.12	Holding Freezer		80	1	182	182	102	55%	331	\$ 550	\$ 182,000
3.1.13	Molecular Diagnostics & DNA Sequencing			1	1,089	1,089	1,089	55%	1,980	\$ 400	\$ 792,000
3.1.14	Laundry & Equipment Room		97	1	182	182	85	55%	331	\$ 300	\$ 99,273
3.1.15	Laboratory Storage		565	1	484	484	-81	55%	880	\$ 320	\$ 281,600
3.1.16	Garage		382	1	363	363	-19	55%	660	\$ 200	\$ 132,000
Subtotal - FWP Wildlife Lab				2,992		5,159	2,167	9,380		\$ 3,901,909	
4.0	ANALYTICAL LAB										
4.1	Laboratories & Support		5,055			6,414	1,359	11,662		\$ 4,966,182	
4.1.1	Feed & Fertilizer										
4.1.1.1	Feed/Fertilizer Sample Prep	001A, 001B	545	1	484	484	-61	55%	880	\$ 430	\$ 378,400
4.1.1.2	Feed/Fertilizer Sample Prep & Balance	012	216	1	242	242	26	55%	440	\$ 430	\$ 189,200
4.1.1.3	Feed/Fertilizer Chemistry Lab	019, 039	758	1	726	726	-32	55%	1,320	\$ 430	\$ 567,600
4.1.1.4	ICP Room	016, 016A	263	1	242	242	-21	55%	440	\$ 480	\$ 211,200
4.1.2	Pesticide & Groundwater										
4.1.2.1	Pesticide Sample Prep	020	165	1	182	182	17	55%	331	\$ 430	\$ 142,291
4.1.2.2	Low-Level Pesticide/Groundwater Laboratory	001C	442	1	484	484	42	55%	880	\$ 430	\$ 378,400
4.1.2.3	Medium-Level Pesticide Laboratory	014	452	1	484	484	32	55%	880	\$ 430	\$ 378,400
4.1.2.4	High-Level Pesticide Laboratory	031	150	1	242	242	92	55%	440	\$ 480	\$ 211,200
4.1.2.5	Pesticide LCMS	024	248	1	484	484	236	55%	880	\$ 430	\$ 378,400
4.1.3	Shared Space										
4.1.3.1	Feed/Fertilizer/Pesticide Lab	021, 038	649	1	726	726	77	55%	1,320	\$ 430	\$ 567,600
4.1.3.2	Feed/Pesticide GCMS	025	354	1	484	484	130	55%	880	\$ 480	\$ 422,400
4.1.3.3	Freezer/Standards Room	034	107	1	121	121	14	55%	220	\$ 430	\$ 94,600
4.1.3.4	Oven Room	038A	29	1	242	242	213	55%	440	\$ 480	\$ 211,200
4.1.3.5	Cooler Room	033	43	1	182	182	139	55%	331	\$ 430	\$ 142,291
4.1.3.6	Secured Sample Storage			1	121	121	121	55%	220	\$ 430	\$ 94,600
4.1.3.7	Hazardous Waste	032, 036	100	1	242	242	142	55%	440	\$ 430	\$ 189,200
4.1.3.8	Chemical Storage	013	195	1	242	242	47	55%	440	\$ 430	\$ 189,200
4.1.3.9	Receiving & Storage	001C	339	1	484	484	145	55%	880	\$ 250	\$ 220,000
4.2	Office & Support		1,653			1,463	-190	2,660		\$ 741,164	
4.2.1	Receiving & Reception	010	367	1	363	363	-4	55%	660	\$ 280	\$ 184,800
4.2.2	Bureau Chief Office	009	215	1	140	140	-75	55%	255	\$ 280	\$ 71,273
4.2.3	Program Managers Office	011	161	1	140	140	-21	55%	255	\$ 280	\$ 71,273
4.2.4	Staff Office	023, 026	578	1	300	300	-278	55%	545	\$ 260	\$ 141,818
4.2.5	Office Work Room	010	111	1	120	120	9	55%	218	\$ 280	\$ 61,091
4.2.6	Conference Room			1	200	200	200	55%	364	\$ 280	\$ 101,818
4.2.7	Break Room	008	221	1	200	200	-21	55%	364	\$ 300	\$ 109,091
Subtotal - Analytical Lab				6,708		7,877	1,169	14,322		\$ 5,707,345	
5.0	SEED LAB										
5.1	Seed Lab		1,763			2,498	735	4,542		\$ 1,543,500	
5.1.1	Receiving	040	94	1	182	182	88	55%	331	\$ 300	\$ 99,273
5.1.2	Purity Laboratory	054	546	1	484	484	-62	55%	880	\$ 375	\$ 330,000
5.1.3	Dividing Room	051	105	1	121	121	16	55%	220	\$ 375	\$ 82,500
5.1.4	Germination Laboratory	024	468	1	726	726	258	55%	1,320	\$ 375	\$ 495,000
5.1.5	Germinator/Growth Chamber Room	038	169	1	242	242	73	55%	440	\$ 350	\$ 154,000
5.1.6	Sample Storage	043, Trailer	240	1	363	363	123	55%	660	\$ 300	\$ 198,000
5.1.7	Director Office	027	141	1	140	140	-1	55%	255	\$ 280	\$ 71,273
5.1.8	Staff Area			4	60	240	240	55%	436	\$ 260	\$ 113,455
Subtotal - Seed Lab				1,763		2,498	735	4,542		\$ 1,543,500	



**Baseline Option**

**6.0 PULSE LAB**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
6.1	Pulse Lab		751			3,404	2,653	6,189		\$ 2,199,709	
6.1.1	Sample Processing Laboratory	024	312	1	726	726	414	55%	1,320	\$ 320	\$ 422,400
6.1.2	Molecular Biology Laboratory	021	287	1	726	726	439	55%	1,320	\$ 400	\$ 528,000
6.1.3	Nematode Processing Laboratory			1	182	182	182	55%	331	\$ 400	\$ 132,364
6.1.4	Germinator/Growth Chamber Room	038	42	1	182	182	140	55%	331	\$ 400	\$ 132,364
6.1.5	Cold Room			1	121	121	121	55%	220	\$ 500	\$ 110,000
6.1.6	Laboratory Storage			1	121	121	121	55%	220	\$ 320	\$ 70,400
6.1.7	Greenhouse			1	484	484	484	55%	880	\$ 400	\$ 352,000
6.1.8	Headhouse			1	242	242	242	55%	440	\$ 350	\$ 154,000
6.1.9	Director Office			1	140	140	30	55%	255	\$ 280	\$ 71,273
6.1.10	Staff Area	036	110	8	60	480	480	55%	873	\$ 260	\$ 226,909
Subtotal - Pulse Lab			751			3,404	2,653	6,189		\$ 2,199,709	

SUMMARY	Existing NSF	28,544	Proposed NSF	50,788	22,244	Prop. GSF	92,342	Const. Cost	\$ 37,267,855
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**CONSTRUCTION COST SUMMARY**

**Building Costs**

Building Construction	\$ 37,267,855
Sitework	\$ 2,000,000
Site Utilities	\$ 1,000,000

**Contingency**

Design Contingency	10%	\$ 4,026,785
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**Escalation from June 2018 to June 2020**

Annual Escalation Rate	4%	\$ 3,614,442.62
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Total Construction Cost	\$ 47,909,083
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1. Construction Cost per GSF = \$ 518.82

2. Not including FFE, A/V, design fees, commissioning, testing

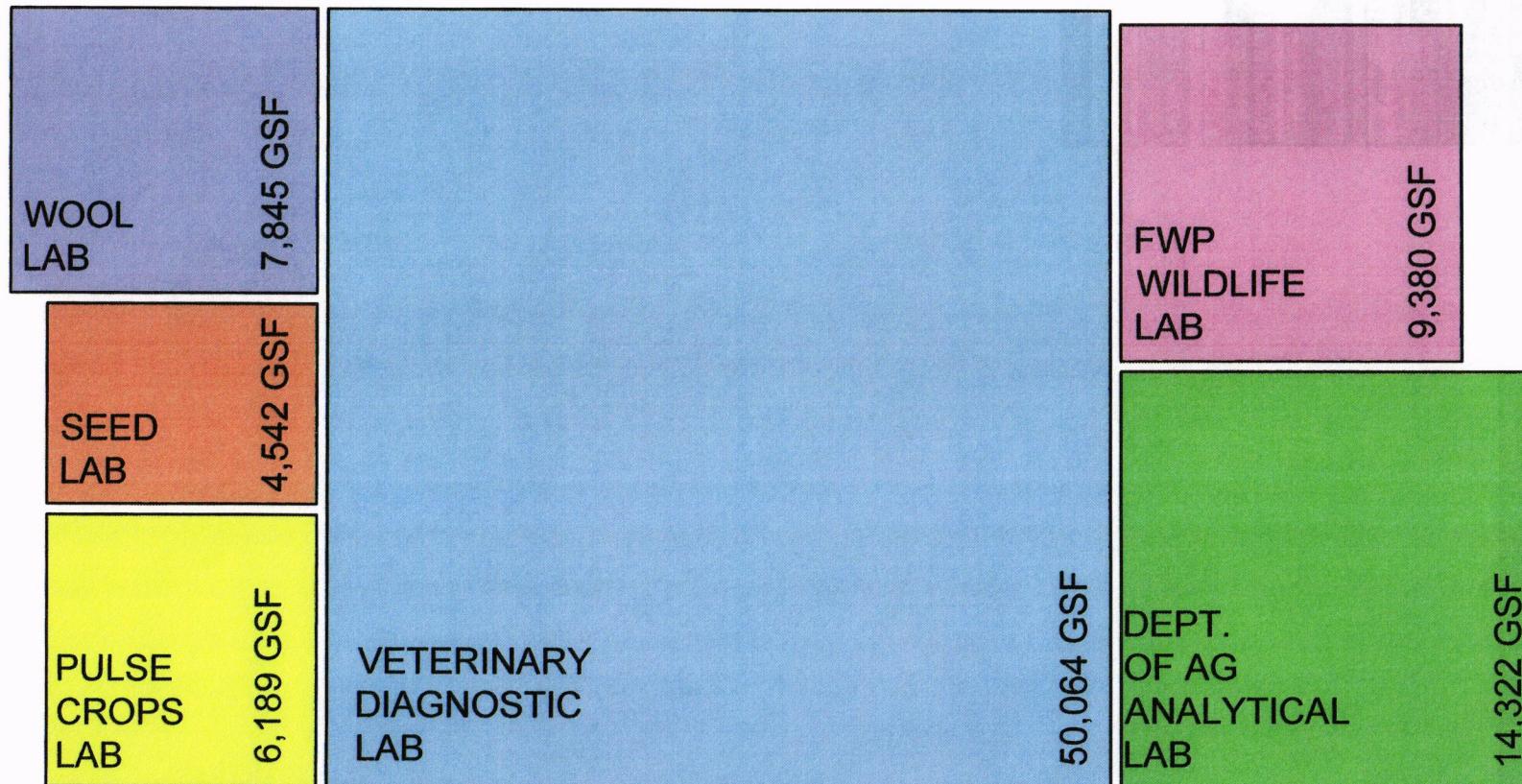
**PROJECT COST SUMMARY**

**Project Costs**

Construction Cost	\$ 47,909,083
Project Associated Costs	25%

Total Project Cost	\$ 59,886,353
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## Baseline Option



**NEW BUILDING  
SCALE STUDY**

SCALE: 1" = 40'-0"

## OPTION 1

Option 1 is formulated with the intent to provide a new building to house the Dept. of Livestock Veterinary Diagnostic Laboratory, the Department of Agriculture Analytical Laboratory and (possibly) the FWP Wildlife Laboratory on a site to be determined. The remaining three departments (Wool Lab, Pulse Lab and Seed Lab) would then be relocated in renovated space vacated mainly by the Veterinary Diagnostic Laboratory in the Marsh Laboratory Facility. The core idea of this option is that the state labs can be co-housed in a new building and that the labs that are more directly affiliated with Montana State University can move into space already operated by that institution. Option 1 is broken into four subsets owing to significant variance in how the remaining labs can be accommodated in the vacated spaces, described below and designated Options 1A through 1D. Note that in all schemes under Option 1, McCall Hall is vacated and available for reuse, but that no monies have been identified in these options to provide renovation or retrofit to that facility.

### OPTION 1A

Option 1A provides a new building that will house the Dept. of Livestock Veterinary Diagnostic Laboratory, the Department of Agriculture Analytical Laboratory and the FWP Wildlife Laboratory on a greenfield site in accordance with the scope and per gross square foot costs established in the Baseline Option. Upon completion of the new facility, the roughly 15,000 gross square feet vacated by the VDL in the Marsh Lab Facility can then be renovated to accommodate the Montana State Seed Lab, Pulse Crops Lab and Wool Lab. The combined net square footage requested by these three departments is 10,217 net square feet which compares well with the existing 11,549 net square feet that the Veterinary Diagnostic lab currently occupies in the Marsh Facility.

A net to gross conversion of 55% has been assumed for the new building which is projected to have a total gross square footage of 72,924. If rooftop air handlers are allowed on the renovated areas of Marsh Lab, it is assumed that the floor plan layout will generally reuse existing restroom, mechanical, electrical and corridor spaces, achieving a net to gross ratio that is similar to what exists. A grossing factor of 68% has been shown for the renovation of Marsh Lab.

### VACATED SPACE

The following list shows the amount of net square footage that would be vacated and available for reuse under Option 1A. As previously stated, no costs have been provided for retrofit or repurposing of these facilities.

Wool Lab	4,781 nsf
FWP Wildlife Laboratory	2,992 nsf
McCall Hall	6,708 nsf
Marsh Laboratory	2,514 nsf
<b>Total</b>	<b>16,995 nsf</b>

### CONSTRUCTION AND PROJECT COSTS

Line item costs for the new building shown in the attached room list for Option 1A were established in accordance with the Baseline Option as were the assumptions for site/utility costs, contingency and escalation. The line item costs for the renovation have been adjusted to account for the reuse of the existing shell, some corridor walls and other systems. The design contingency for all renovated spaces has been adjusted to 15% to account for unforeseen conditions and potential remediation. The construction of the new building has been escalated at 4% to an assumed mid-point of construction in the Summer of 2020 while the renovated areas have been escalated for one additional year to account for required phasing. As shown on the attached room list, Option 1A presently shows the construction cost for the new building at approximately \$40,400,000 and a renovation cost at approximately \$4,400,000. A project soft cost burden of 25% has been assumed bringing the total project costs for Option 1A to approximately \$55,975,000.



**Option 1A**

SPACE SUMMARY		Existing Area (Net)		Proposed Area (Net)		Proposed Area (Gross)		Estimated Cost									
<b>New Building</b>																	
<b>1.0 VETERINARY DIAGNOSTIC LAB</b>																	
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost						
1.1	Receiving/Accessioning		424			1,573	1,149		2,860	\$	940,500						
1.1.1	Walk-In Samples			1	363	363	363	55%	660	\$	300 \$ 198,000						
1.1.2	Conference Room			1	242	242	242	55%	440	\$	300 \$ 132,000						
1.1.3	Unisex Restroom			1	121	121	121	55%	220	\$	350 \$ 77,000						
1.1.4	Delivery and Night Drop-Off Vestibule	076A	33	1	121	121	88	55%	220	\$	325 \$ 71,500						
1.1.5	Processing & Accessioning	078	391	1	726	726	335	55%	1,320	\$	350 \$ 462,000						
1.2	Necropsy & Prep		2,623			4,841	2,218		8,802	\$	5,104,909						
1.2.1	Necropsy Receiving	082	801	1	363	363	-438	55%	660	\$	400 \$ 264,000						
1.2.2	Live Animal Holding	082	115	1	363	363	248	55%	660	\$	400 \$ 264,000						
1.2.3	Tissue Trimming / Formalin Prep	078A	117	1	242	242	125	55%	440	\$	450 \$ 198,000						
1.2.4	BSL-2 Necropsy	081	622	1	1,089	1,089	467	55%	1,980	\$	750 \$ 1,485,000						
1.2.5	Evidence Storage	082	90	1	121	121	31	55%	220	\$	400 \$ 88,000						
1.2.6	Photography & Drug Storage			1	242	242	242	55%	440	\$	400 \$ 176,000						
1.2.7	Outgoing Cooler	082A	94	1	182	182	88	55%	331	\$	500 \$ 165,455						
1.2.8	Incoming Cooler w/ nightdrop	082A	94	1	182	182	88	55%	331	\$	500 \$ 165,455						
1.2.9	Lockers, Shower, Gowning & Boot Room	079A, 080A	330	1	1,331	1,331	1,001	55%	2,420	\$	550 \$ 1,331,000						
1.2.10	Necropsy Storage			1	121	121	121	55%	220	\$	400 \$ 88,000						
1.2.11	Incinerator	082	360	1	484	484	124	55%	880	\$	900 \$ 792,000						
1.2.12	Formalin fixed storage		0	1	121	121	121	55%	220	\$	400 \$ 88,000						
1.3	Laboratory Sections & Support		5,668			12,043	6,375		21,896	\$	9,121,364						
<i>Clinical Pathology 1.3.1</i>																	
1.3.1.1	Clinical Pathology Laboratory	088	382	1	726	726	344	55%	1,320	\$	400 \$ 528,000						
1.3.1.2	Clinical Pathology Equipment Room			1	121	121	121	55%	220	\$	350 \$ 77,000						
1.3.1.3	Clinical Pathology Microscopy Room			1	121	121	121	55%	220	\$	400 \$ 88,000						
<i>Histology 1.3.2</i>																	
1.3.2.1	Histology Laboratory	096	409	1	726	726	317	55%	1,320	\$	400 \$ 528,000						
1.3.2.2	Histology Equipment Room	096A	65	1	182	182	117	55%	331	\$	350 \$ 115,818						
1.3.2.3	Histology Slide/Block Storage	067, 97A	152	1	363	363	211	55%	660	\$	350 \$ 231,000						
<i>Bacteriology 1.3.3</i>																	
1.3.3.1	Bacteriology Laboratory	087	584	1	726	726	142	55%	1,320	\$	400 \$ 528,000						
1.3.3.2	Bacteriology Dirty Room	084	284	1	121	121	-163	55%	220	\$	400 \$ 88,000						
1.3.3.3	Bacteriology Microscopy			1	121	121	121	55%	220	\$	400 \$ 88,000						
1.3.3.4	Bacteriology Equipment	086	81	1	182	182	101	55%	331	\$	350 \$ 115,818						
<i>Virology 1.3.4</i>																	
1.3.4.1	Virology Laboratory	090, 093	452	1	726	726	274	55%	1,320	\$	400 \$ 528,000						
1.3.4.2	Virology Fluorescent Microscopy	092	23	1	121	121	98	55%	220	\$	400 \$ 88,000						
1.3.4.3	Virology Equipment Room	091	90	1	182	182	92	55%	331	\$	350 \$ 115,818						
1.3.4.4	Virology Clean Room			1	121	121	121	55%	220	\$	400 \$ 88,000						
1.3.4.5	Virology Dirty Room			1	182	182	182	55%	331	\$	400 \$ 132,364						
<i>Serology 1.3.5</i>																	
1.3.5.1	Serology Laboratory	094	608	1	726	726	118	55%	1,320	\$	400 \$ 528,000						
1.3.5.2	Serology Centrifuge & Liquid Handling			1	182	182	182	55%	331	\$	400 \$ 132,364						
1.3.5.3	Serology Equipment Room			1	182	182	182	55%	331	\$	350 \$ 115,818						
<i>Molecular Diagnostics 1.3.6</i>																	
1.3.6.1	Molecular Diagnostics Sample Prep			1	363	363	363	55%	660	\$	400 \$ 264,000						
1.3.6.2	Molecular Diagnostics Extraction	116	346	1	363	363	17	55%	660	\$	400 \$ 264,000						
1.3.6.3	Molecular Diagnostics Clean Room	116B	181	1	182	182	1	55%	331	\$	400 \$ 132,364						
1.3.6.4	Molecular Diagnostics Amplification	112	257	1	182	182	-76	55%	330	\$	400 \$ 132,000						
1.3.6.5	Molecular Diagnostics Freezer Room			1	121	121	121	55%	220	\$	350 \$ 77,000						
1.3.6.6	Molecular Diagnostics Storage	116F	68	1	121	121	53	55%	220	\$	350 \$ 77,000						
<i>DNA Sequencing 1.3.7</i>																	
1.3.7.1	DNA Sequencing Laboratory Suite			1	726	726	726	55%	1,320	\$	400 \$ 528,000						
<i>Milk 1.3.8</i>																	
1.3.8.1	Milk Laboratory	095	603	1	1,089	1,089	486	55%	1,980	\$	400 \$ 792,000						
1.3.8.2	Milk Laboratory Equipment			1	363	363	363	55%	660	\$	350 \$ 231,000						
<i>Food Safety 1.3.9</i>																	
1.3.9.1	Food Safety Laboratory			1	726	726	726	55%	1,320	\$	400 \$ 528,000						
1.3.9.2	Food Safety Sterilization & Equipment			1	121	121	121	55%	220	\$	600 \$ 132,000						
<i>Shared Laboratory Support 1.3.10</i>																	
1.3.10.1	Sterilization, Glassware & Pure Water	73	717	1	726	726	9	55%	1,320	\$	750 \$ 990,000						
1.3.10.2	Media Prep Lab	073	100	1	121	121	21	55%	220	\$	400 \$ 88,000						
1.3.10.3	Biohazard Sterilization	075A	81	1	121	121	40	55%	220	\$	750 \$ 165,000						
1.3.10.4	Freezer Farm			1	363	363	363	55%	660	\$	350 \$ 231,000						
1.3.10.5	Hazardous Waste	082	115	1	242	242	127	55%	440	\$	400 \$ 176,000						
1.3.10.6	Laundry Room	075	70	1	121	121	51	55%	220	\$	300 \$ 66,000						
1.3.10.7	Chemical Storage			1	182	182	182	55%	330	\$	400 \$ 132,000						
1.4	Biocontainment		0			2,360	2,360		4,291	\$	3,185,091						
1.4.1	Lockers, Shower, Gowning & Boot Room			1	363	363	363	55%	660	\$	550 \$ 363,000						
1.4.2	Autoclave Sterilization			1	182	182	182	55%	331	\$	650 \$ 215,091						
1.4.3	Equipment Decontamination Airlock			1	121	121	121	55%	220	\$	650 \$ 143,000						
1.4.4	BSL-3 Laboratory			1	726	726	726	55%	1,320	\$	800 \$ 1,056,000						
1.4.5	BSL-3 Specialized Laboratory			2	121	242	242	55%	440	\$	800 \$ 352,000						
1.4.6	BSL-2 Enhanced Necropsy			1	726	726	726	55%	1,320	\$	800 \$ 1,056,000						
1.5	Office & Support		2,834			7,060	4,226		12,836	\$	3,637,455						
1.5.1	Reception and Waiting	077	570	1	800	800	230	55%	1,455	\$	280 \$ 407,273						
1.5.2	Director Office	083B	116	1	140	140	24	55%	255	\$	280 \$ 71,273						
1.5.3	Associate Director Office			1	120	120	120	55%	218	\$	280 \$ 61,091						
1.5.4	Administrative Conference Room			1	300	300	300	55%	545	\$	280 \$ 152,727						
1.5.5	Business Manager Office			1	120	120	120	55%	218	\$	280 \$ 61,091						
1.5.6	Quality Manager Office	097	215	1	120	120	-95	55%	218	\$	280 \$ 61,091						
1.5.7	Pathologist Office	083A, 114	256	4	120	480	224	55%	873	\$	280 \$ 244,364						
1.5.8	Open Office			25	60	1,500	1,500	55%	2,727	\$	260 \$ 709,091						

**State of Montana**  
**Combined State Lab Study**  
**June 6, 2018**



**LPW**  
ARCHITECTURE

The  
 Clark  
 Enerksen  
 Partners

**Option 1A**

1.5.9	Library/Rounds Room	083	122	1	300	300	178	55%	545	\$ 280	\$ 152,727
1.5.10	Conference Room			2	120	240	240	55%	436	\$ 280	\$ 122,182
1.5.11	Multipurpose/Seminar Room	060	629	1	800	800	171	55%	1,455	\$ 300	\$ 436,364
1.5.12	Break Room	101	300	1	600	600	300	55%	1,091	\$ 300	\$ 327,273
1.5.13	Shipping			1	120	120	120	55%	218	\$ 300	\$ 65,455
1.5.14	Staff Lockers			1	300	300	300	55%	545	\$ 450	\$ 245,455
1.5.15	Storage	075	318	1	1,000	1,000	682	55%	1,818	\$ 250	\$ 454,545
1.5.16	Server Room	100	308	1	120	120	-188	55%	218	\$ 300	\$ 65,455
Subtotal - Veterinary Diagnostic Lab				11,549		27,877	16,328		50,685		\$ 21,989,318

**3.0 FWP WILDLIFE LAB**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
3.1	FWP Wildlife Lab		2,992			4,554	1,562		8,280		\$ 3,356,309
3.1.1	Reception & Open Office		470	1	242	242	-228	55%	440	\$ 280	\$ 123,200
3.1.2	Director Office		90	1	140	140	50	55%	255	\$ 280	\$ 71,273
3.1.3	Staff Office		272	2	120	240	-32	55%	436	\$ 260	\$ 113,455
3.1.4	Open Ofce / Seasonal Labor		0	4	60	240	240	55%	436	\$ 260	\$ 113,455
3.1.5	Break Room		0	121	0	0	55%	0	280	\$	-
3.1.6	Work Room			1	121	121	121	55%	220	\$ 280	\$ 61,600
3.1.7	Office Storage Room			1	121	121	121	55%	220	\$ 250	\$ 55,000
3.1.8	Lockers, Shower, Gowning & Boot Room		280	0	484	0	-280	55%	0	\$ 550	\$ -
3.1.9	Sample Prep		221	1	242	242	21	55%	440	\$ 400	\$ 176,000
3.1.10	Necropsy		400	1	726	726	326	55%	1,320	\$ 750	\$ 990,000
3.1.11	Holding Cooler		135	1	182	182	47	55%	331	\$ 500	\$ 165,455
3.1.12	Holding Freezer		80	1	182	182	102	55%	331	\$ 550	\$ 182,000
3.1.13	Molecular Diagnostics & DNA Sequencing			1	1,089	1,089	1,089	55%	1,980	\$ 400	\$ 792,000
3.1.14	Laundry & Equipment Room		97	1	182	182	85	55%	331	\$ 300	\$ 99,273
3.1.15	Laboratory Storage		565	1	484	484	-81	55%	880	\$ 320	\$ 281,600
3.1.16	Garage		382	1	363	363	-19	55%	660	\$ 200	\$ 132,000
Subtotal - FWP Wildlife Lab				2,992		4,554	1,562		8,280		\$ 3,356,309

**4.0 ANALYTICAL LAB**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
4.1	Laboratories & Support		5,055			6,414	1,359		11,662		\$ 4,966,182
	<i>Feed &amp; Fertilizer</i>										
4.1.1	Feed/Fertilizer Sample Prep	001A, 001B	545	1	484	484	-61	55%	880	\$ 430	\$ 378,400
4.1.2	Feed/Fertilizer Sample Prep & Balance	012	216	1	242	242	26	55%	440	\$ 430	\$ 189,200
4.1.3	Feed/Fertilizer Chemistry Lab	019, 039	758	1	726	726	-32	55%	1,320	\$ 430	\$ 567,600
4.1.4	ICP Room	016, 016A	263	1	242	242	-21	55%	440	\$ 480	\$ 211,200
	<i>Pesticide &amp; Groundwater</i>										
4.1.5	Pesticide Sample Prep	020	165	1	182	182	17	55%	331	\$ 430	\$ 142,291
4.1.6	Low-Level Pesticide/Groundwater Laboratory	001C	442	1	484	484	42	55%	880	\$ 430	\$ 378,400
4.1.7	Medium-Level Pesticide Laboratory	014	452	1	484	484	32	55%	880	\$ 430	\$ 378,400
4.1.8	High-Level Pesticide Laboratory	031	150	1	242	242	92	55%	440	\$ 480	\$ 211,200
4.1.9	Pesticide LCMS	024	248	1	484	484	236	55%	880	\$ 430	\$ 378,400
	<i>Shared Space</i>										
4.1.10	Feed/Fertilizer/Pesticide Lab	021, 038	649	1	726	726	77	55%	1,320	\$ 430	\$ 567,600
4.1.11	Feed/Pesticide GCMS	025	354	1	484	484	130	55%	880	\$ 480	\$ 422,400
4.1.12	Freezer/Standards Room	034	107	1	121	121	14	55%	220	\$ 430	\$ 94,600
4.1.13	Oven Room	038A	29	1	242	242	213	55%	440	\$ 480	\$ 211,200
4.1.14	Cooler Room	033	43	1	182	182	139	55%	331	\$ 430	\$ 142,291
4.1.15	Secured Sample Storage			1	121	121	121	55%	220	\$ 430	\$ 94,600
4.1.16	Hazardous Waste	032, 036	100	1	242	242	142	55%	440	\$ 430	\$ 189,200
4.1.17	Chemical Storage	013	195	1	242	242	47	55%	440	\$ 430	\$ 189,200
4.1.18	Receiving & Storage	001C	339	1	484	484	145	55%	880	\$ 250	\$ 220,000
4.2	Office & Support		1,653			1,263	-390		2,296		\$ 632,073
4.2.1	Receiving & Reception	010	367	1	363	363	-4	55%	660	\$ 280	\$ 184,800
4.2.2	Bureau Chief Office	009	215	1	140	140	-75	55%	255	\$ 280	\$ 71,273
4.2.3	Program Managers Office	011	161	1	140	140	-21	55%	255	\$ 280	\$ 71,273
4.2.4	Staff Office	023, 026	578	1	300	300	-278	55%	545	\$ 260	\$ 141,818
4.2.5	Office Work Room	010	111	1	120	120	9	55%	218	\$ 280	\$ 61,091
4.2.6	Conference Room			1	200	200	200	55%	364	\$ 280	\$ 101,818
4.2.7	Break Room	008	221	0	200	0	-221	55%	0	\$ 300	\$ -
Subtotal - Analytical Lab				6,708		7,677	969		13,958		\$ 5,598,255

SUMMARY	Existing NSF	21,249	Proposed NSF	40,108	18,859	Prop. GSF	72,924	Const. Cost	\$30,943,882
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CONSTRUCTION COST SUMMARY (New Building)			
<b>Building Costs</b>			
Building Construction			\$ 30,943,882
Sitework			\$ 2,000,000
Site Utilities			\$ 1,000,000
<b>Contingency</b>			
Design Contingency	10%		\$ 3,394,388
<b>Escalation from June 2018 to June 2020</b>			
Annual Escalation Rate	4%		\$ 3,046,802.83
<b>Construction Cost (New Building)</b>			
1. Construction Cost per GSF =			\$ 553.80
2. Not including FFE, A/V, design fees, commissioning, testing			



**Renovation in Marsh Lab Facility**

**2.0 WOOL LAB**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
2.1	<b>Wool Lab</b>		<b>4,781</b>			<b>4,315</b>	<b>-466</b>		<b>6,346</b>		<b>\$ 1,157,007</b>
2.1.1	Receiving Garage & Sample Storage	008, 010	1,563	1	1,452	1,452	-111	68%	2,135	\$ 100	\$ 213,529
2.1.2	Analytical Laboratory	102	292	1	363	363	71	68%	534	\$ 275	\$ 146,801
2.1.3	Wet Chemistry Laboratory	001, 003, 004	1,090	1	484	484	-606	68%	712	\$ 275	\$ 195,735
2.1.4	45-Person Classroom	101	458	1	908	908	450	68%	1,335	\$ 275	\$ 367,206
2.1.5	Director Office	107	157	1	140	140	-17	68%	206	\$ 150	\$ 30,882
2.1.6	Open Office	108	238	1	242	242	4	68%	356	\$ 150	\$ 53,382
2.1.7	Storage	002, 103, 105, Attic	825	1	726	726	-99	68%	1,068	\$ 140	\$ 149,471
2.1.8	Vacated Office	106	158	1	0	0	-158	68%	0	-	-
Subtotal - Wool Lab				4,781		4,315	-466		6,346		\$ 1,157,007

**5.0 SEED LAB**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
5.1	<b>Seed Lab</b>		<b>1,763</b>			<b>2,498</b>	<b>735</b>		<b>3,674</b>		<b>\$ 866,949</b>
5.1.1	Receiving	040	94	1	182	182	88	68%	268	\$ 250	\$ 66,912
5.1.2	Purity Laboratory	054	546	1	484	484	-62	68%	712	\$ 275	\$ 195,735
5.1.3	Dividing Room	051	105	1	121	121	16	68%	178	\$ 275	\$ 48,934
5.1.4	Germination Laboratory	024	468	1	726	726	258	68%	1,068	\$ 275	\$ 293,603
5.1.5	Germinator/Growth Chamber Room	038	169	1	242	242	73	68%	356	\$ 275	\$ 97,868
5.1.6	Sample Storage	043, Trailer	240	1	363	363	123	68%	534	\$ 150	\$ 80,074
5.1.7	Director Office	027	141	1	140	140	-1	68%	206	\$ 150	\$ 30,882
5.1.8	Staff Area			4	60	240	240	68%	353	\$ 150	\$ 52,941
Subtotal - Seed Lab				1,763		2,498	735		3,674		\$ 866,949

**6.0 PULSE LAB**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
6.1	<b>Pulse Lab</b>		<b>751</b>			<b>3,404</b>	<b>2,653</b>		<b>5,006</b>		<b>\$ 1,373,860</b>
6.1.1	Sample Processing Laboratory	024	312	1	726	726	414	68%	1,068	\$ 250	\$ 266,912
6.1.2	Molecular Biology Laboratory	021	287	1	726	726	439	68%	1,068	\$ 275	\$ 293,603
6.1.3	Nematode Processing Laboratory		1	182	182	182		68%	268	\$ 275	\$ 73,603
6.1.4	Germinator/Growth Chamber Room	038	42	1	182	182	140	68%	268	\$ 275	\$ 73,603
6.1.5	Cold Room		1	121	121	121		68%	178	\$ 400	\$ 71,176
6.1.6	Laboratory Storage		1	121	121	121		68%	178	\$ 275	\$ 48,934
6.1.7	Greenhouse		1	484	484	484		68%	712	\$ 400	\$ 284,706
6.1.8	Headhouse		1	242	242	242		68%	356	\$ 350	\$ 124,559
6.1.9	Director Office	036	110	1	140	140	30	68%	206	\$ 150	\$ 30,882
6.1.10	Staff Area		8	60	480	480		68%	706	\$ 150	\$ 105,882
Subtotal - Pulse Lab				751		3,404	2,653		5,006		\$ 1,373,860

**SUMMARY**

Existing NSF	7,295	Proposed NSF	10,217	2,922	Prop. GSF	15,025	Const. Cost	\$ 3,397,816
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**CONSTRUCTION COST SUMMARY (Renovation)**

**Building Costs**

Building Construction \$ 3,397,816

**Contingency**

Design Contingency 15% \$ 509,672

**Escalation from June 2018 to June 2021**

Annual Escalation Rate 4% \$ 487,904.66

**Construction Cost (Renovation)** \$ 4,395,393

1. Construction Cost per GSF = \$ 292.54

2. Not including FFE, A/V, design fees, commissioning, testing

**TOTAL PROJECT COST SUMMARY**

**Project Costs**

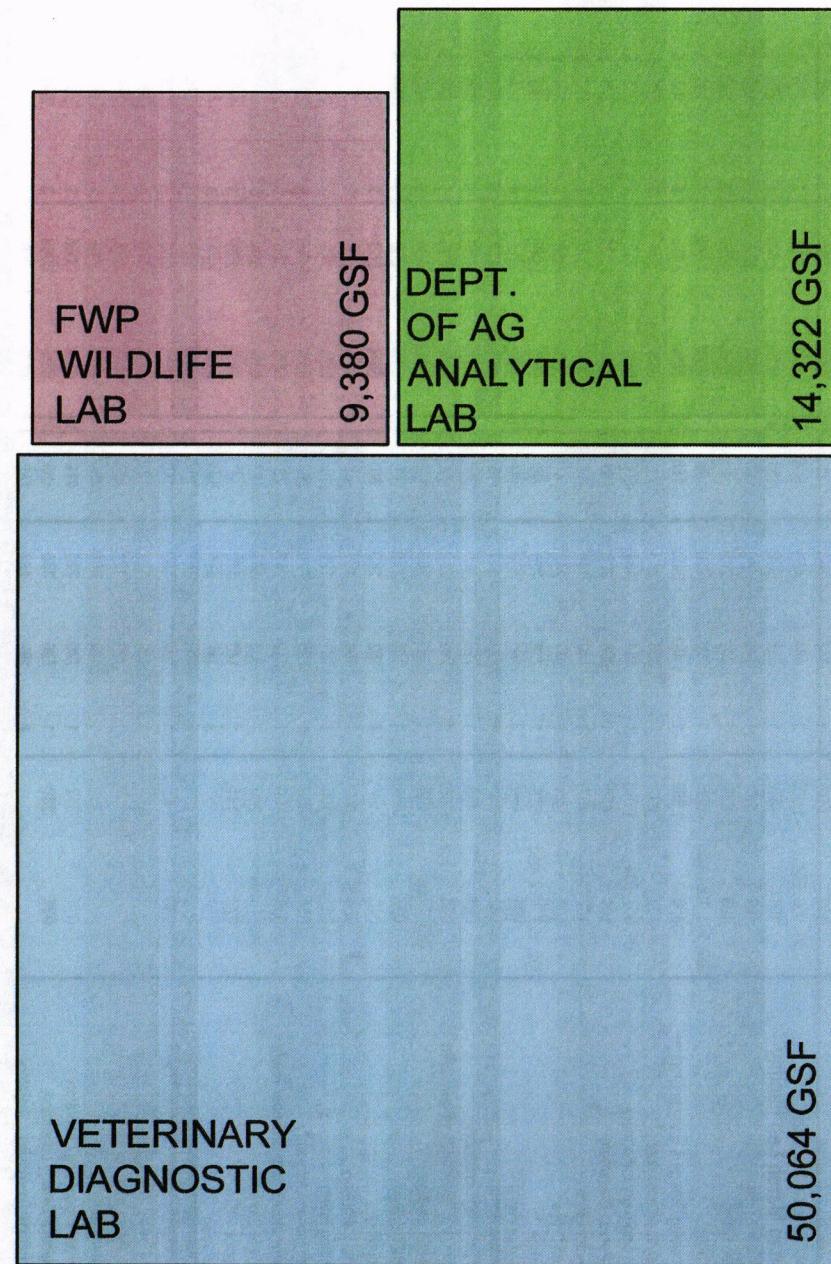
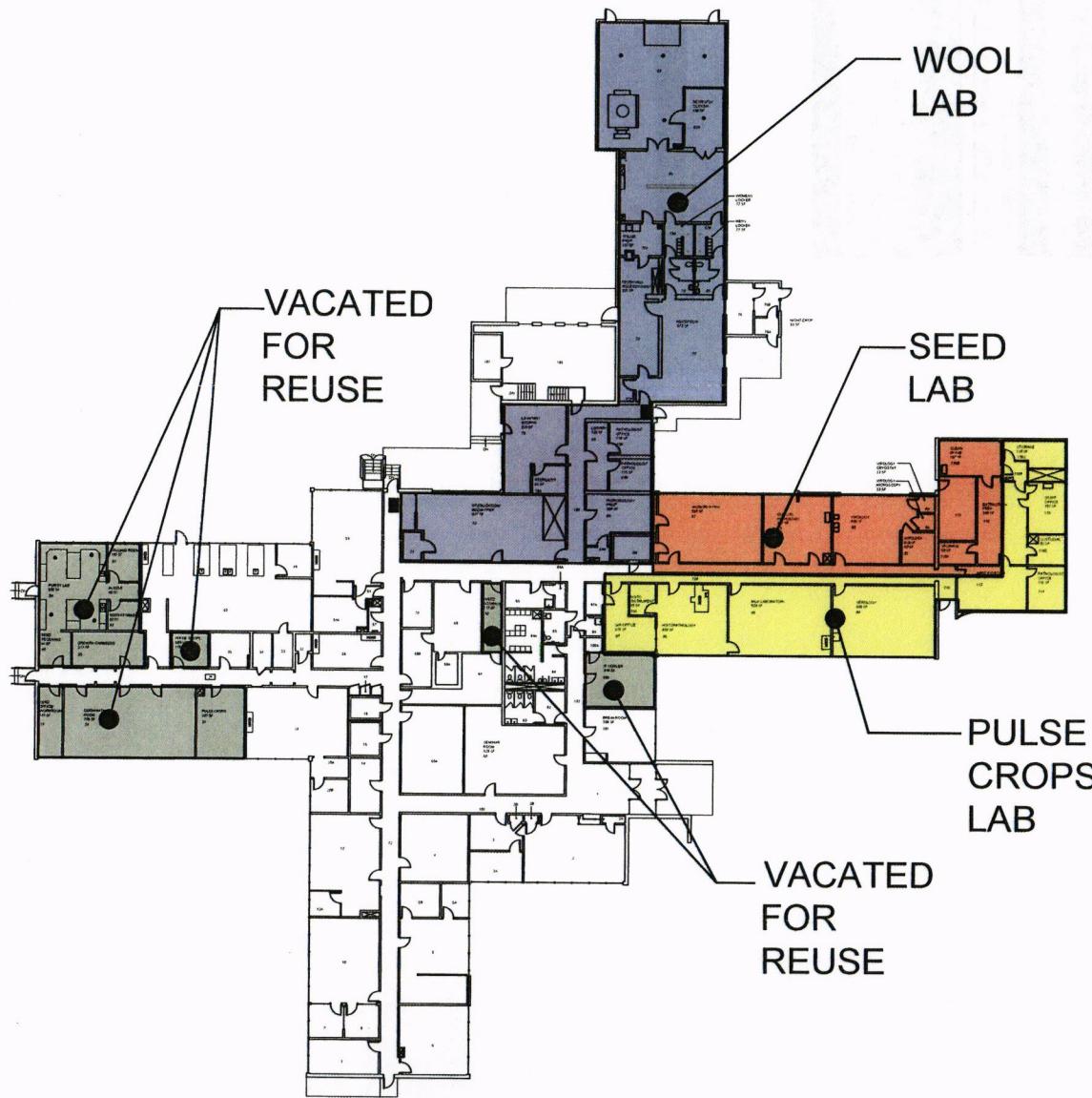
Construction Cost - New Building \$ 40,385,073

Construction Cost - Renovation \$ 4,395,393

Project Associated Costs 25% \$ 11,195,116.52

Total Project Cost \$ 55,975,583

## Option 1A



## OPTION 1B

Option 1B is similar to Option 1A with the key difference being that the FWP Wildlife Lab remains where it is currently located and is not included in the new facility. The existing Wildlife lab is currently being renovated which should alleviate some of their space concerns, but the problems associated with transporting carcasses over to the VDL for incineration would remain. This option provides a new building that will house the Dept. of Livestock Veterinary Diagnostic Laboratory, and the Department of Agriculture Analytical Laboratory and continues with an identical renovation as that shown in Option 1A. The new building in this scenario is projected to have a total gross square footage of 64,204.

### VACATED SPACE

The following list shows the amount of net square footage that would be vacated and available for reuse under Option 1B. As previously stated, no costs have been provided for retrofit or repurposing of these facilities.

Wool Lab	4,781 nsf
McCall Hall	6,708 nsf
Marsh Laboratory	2,514 nsf
<b>Total</b>	<b>14,003 nsf</b>

### CONSTRUCTION AND PROJECT COSTS

Line item costs for the new building shown in the attached room list for Option 1B were established in accordance with the Baseline Option as were the assumptions for site/utility costs, contingency and escalation. The line item costs for the renovation have been adjusted to account for the reuse of the existing shell, some corridor walls and other systems. The design contingency for all renovated spaces has been adjusted to 15% to account for unforeseen conditions and potential remediation. The construction of the new building has been escalated at 4% to an assumed mid-point of construction in the Summer of 2020 while the renovated areas have been escalated for one additional year to account for required phasing. As shown on the attached room list, Option 1B presently shows the construction cost for the new building at approximately \$36,100,000 and a renovation cost at approximately \$4,400,000. A project soft cost burden of 25% has been assumed bringing the total project costs for Option 1B to approximately \$50,620,000.



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**Option 1B**

<b>SPACE SUMMARY</b>		<b>Existing Area (Net)</b>		<b>Proposed Area (Net)</b>		<b>Proposed Area (Gross)</b>		<b>Estimated Cost</b>									
<b>New Building</b>																	
<b>1.0 VETERINARY DIAGNOSTIC LAB</b>																	
<b>Number</b>	<b>Area</b>	<b>Room No.</b>	<b>NSF</b>	<b>Qty</b>	<b>NSF Ea.</b>	<b>NSF</b>	<b>NSF Diff.</b>	<b>Net-to-Gross</b>	<b>GSF</b>	<b>Cost/GSF</b>	<b>Cost</b>						
1.1	Receiving/Accessioning		424			1,573	1,149		2,860	\$	940,500						
1.1.1	Walk-In Samples			1	363	363	363	55%	660	\$	300 \$	198,000					
1.1.2	Conference Room			1	242	242	242	55%	440	\$	300 \$	132,000					
1.1.3	Unisex Restroom			1	121	121	121	55%	220	\$	350 \$	77,000					
1.1.4	Delivery and Night Drop-Off Vestibule	076A	33	1	121	121	88	55%	220	\$	325 \$	71,500					
1.1.5	Processing & Accessioning	078	391	1	726	726	335	55%	1,320	\$	350 \$	462,000					
1.2	<b>Necropsy &amp; Prep</b>		<b>2,623</b>			<b>4,599</b>	<b>1,976</b>		<b>8,362</b>		<b>\$ 4,862,909</b>						
1.2.1	Necropsy Receiving	082	801	1	363	363	-438	55%	660	\$	400 \$	264,000					
1.2.2	Live Animal Holding	082	115	1	363	363	248	55%	660	\$	400 \$	264,000					
1.2.3	Tissue Trimming / Formalin Prep	078A	117	1	242	242	125	55%	440	\$	450 \$	198,000					
1.2.4	BSL-2 Necropsy	081	622	1	1,089	1,089	467	55%	1,980	\$	750 \$	1,485,000					
1.2.5	Evidence Storage	082	90	1	121	121	31	55%	220	\$	400 \$	88,000					
1.2.6	Photography & Drug Storage			1	242	242	242	55%	440	\$	400 \$	176,000					
1.2.7	Outgoing Cooler	082A	94	1	182	182	88	55%	331	\$	500 \$	165,455					
1.2.8	Incoming Cooler w/ nightdrop	082A	94	1	182	182	88	55%	331	\$	500 \$	165,455					
1.2.9	Lockers, Shower, Gowning & Boot Room	079A, 080A	330	1	1,089	1,089	759	55%	1,980	\$	550 \$	1,089,000					
1.2.10	Necropsy Storage				1	121	121	55%	220	\$	400 \$	88,000					
1.2.11	Incinerator	082	360	1	484	484	124	55%	880	\$	900 \$	792,000					
1.2.12	Formalin fixed storage		0	1	121	121	121	55%	220	\$	400 \$	88,000					
1.3	<b>Laboratory Sections &amp; Support</b>		<b>5,668</b>			<b>12,043</b>	<b>6,375</b>		<b>21,896</b>		<b>\$ 9,121,364</b>						
<i>Clinical Pathology 1.3.1</i>																	
1.3.1.1	Clinical Pathology Laboratory	088	382	1	726	726	344	55%	1,320	\$	400 \$	528,000					
1.3.1.2	Clinical Pathology Equipment Room			1	121	121	121	55%	220	\$	350 \$	77,000					
1.3.1.3	Clinical Pathology Microscopy Room			1	121	121	121	55%	220	\$	400 \$	88,000					
<i>Histology 1.3.2</i>																	
1.3.2.1	Histology Laboratory	096	409	1	726	726	317	55%	1,320	\$	400 \$	528,000					
1.3.2.2	Histology Equipment Room	096A	65	1	182	182	117	55%	331	\$	350 \$	115,818					
1.3.2.3	Histology Slide/Block Storage	067, 97A	152	1	363	363	211	55%	660	\$	350 \$	231,000					
<i>Bacteriology 1.3.3</i>																	
1.3.3.1	Bacteriology Laboratory	087	584	1	726	726	142	55%	1,320	\$	400 \$	528,000					
1.3.3.2	Bacteriology Dirty Room	084	284	1	121	121	-163	55%	220	\$	400 \$	88,000					
1.3.3.3	Bacteriology Microscopy			1	121	121	121	55%	220	\$	400 \$	88,000					
1.3.3.4	Bacteriology Equipment	086	81	1	182	182	101	55%	331	\$	350 \$	115,818					
<i>Virology 1.3.4</i>																	
1.3.4.1	Virology Laboratory	090, 093	452	1	726	726	274	55%	1,320	\$	400 \$	528,000					
1.3.4.2	Virology Fluorescent Microscopy	092	23	1	121	121	98	55%	220	\$	400 \$	88,000					
1.3.4.3	Virology Equipment Room	091	90	1	182	182	92	55%	331	\$	350 \$	115,818					
1.3.4.5	Virology Clean Room			1	121	121	121	55%	220	\$	400 \$	88,000					
1.3.4.6	Virology Dirty Room			1	182	182	182	55%	331	\$	400 \$	132,364					
<i>Serology 1.3.5</i>																	
1.3.5.1	Serology Laboratory	094	608	1	726	726	118	55%	1,320	\$	400 \$	528,000					
1.3.5.2	Serology Centrifuge & Liquid Handling			1	182	182	182	55%	331	\$	400 \$	132,364					
1.3.5.3	Serology Equipment Room			1	182	182	182	55%	331	\$	350 \$	115,818					
<i>Molecular Diagnostics 1.3.6</i>																	
1.3.6.1	Molecular Diagnostics Sample Prep			1	363	363	363	55%	660	\$	400 \$	264,000					
1.3.6.2	Molecular Diagnostics Extraction	116	346	1	363	363	17	55%	660	\$	400 \$	264,000					
1.3.6.3	Molecular Diagnostics Clean Room	116B	181	1	182	182	1	55%	331	\$	400 \$	132,364					
1.3.6.4	Molecular Diagnostics Amplification	112	257	1	182	182	-76	55%	330	\$	400 \$	132,000					
1.3.6.5	Molecular Diagnostics Freezer Room			1	121	121	121	55%	220	\$	350 \$	77,000					
1.3.6.6	Molecular Diagnostics Storage	116F	68	1	121	121	53	55%	220	\$	350 \$	77,000					
<i>DNA Sequencing 1.3.7</i>																	
1.3.7.1	DNA Sequencing Laboratory Suite			1	726	726	726	55%	1,320	\$	400 \$	528,000					
<i>Milk 1.3.8</i>																	
1.3.8.1	Milk Laboratory	095	603	1	1,089	1,089	486	55%	1,980	\$	400 \$	792,000					
1.3.8.2	Milk Laboratory Equipment			1	363	363	363	55%	660	\$	350 \$	231,000					
<i>Food Safety 1.3.9</i>																	
1.3.9.1	Food Safety Laboratory			1	726	726	726	55%	1,320	\$	400 \$	528,000					
1.3.9.2	Food Safety Sterilization & Equipment			1	121	121	121	55%	220	\$	600 \$	132,000					
<i>Shared Laboratory Support 1.3.10</i>																	
1.3.10.1	Sterilization, Glassware & Pure Water	73	717	1	726	726	9	55%	1,320	\$	750 \$	990,000					
1.3.10.2	Media Prep Lab	073	100	1	121	121	21	55%	220	\$	400 \$	88,000					
1.3.10.3	Biohazard Sterilization	075A	81	1	121	121	40	55%	220	\$	750 \$	165,000					
1.3.10.4	Freezer Farm			1	363	363	363	55%	660	\$	350 \$	231,000					
1.3.10.5	Hazardous Waste	082	115	1	242	242	127	55%	440	\$	400 \$	176,000					
1.3.10.6	Laundry Room	075	70	1	121	121	51	55%	220	\$	300 \$	66,000					
1.3.10.7	Chemical Storage			1	182	182	182	55%	330	\$	400 \$	132,000					
<b>1.4 Biocontainment</b>			<b>0</b>			<b>2,360</b>	<b>2,360</b>		<b>4,291</b>		<b>\$ 3,185,091</b>						
1.4.1	Lockers, Shower, Gowning & Boot Room			1	363	363	363	55%	660	\$	550 \$	363,000					
1.4.2	Autoclave Sterilization			1	182	182	182	55%	331	\$	650 \$	215,091					
1.4.3	Equipment Decontamination Airlock			1	121	121	121	55%	220	\$	650 \$	143,000					
1.4.4	BSL-3 Laboratory			1	726	726	726	55%	1,320	\$	800 \$	1,056,000					
1.4.5	BSL-3 Specialized Laboratory			2	121	242	242	55%	440	\$	800 \$	352,000					
1.4.6	BSL-2 Enhanced Necropsy			1	726	726	726	55%	1,320	\$	800 \$	1,056,000					
<b>1.5 Office &amp; Support</b>			<b>2,834</b>			<b>7,060</b>	<b>4,226</b>		<b>12,836</b>		<b>\$ 3,637,455</b>						
1.5.1	Reception and Waiting	077	570	1	800	800	230	55%	1,455	\$	280 \$	407,273					
1.5.2	Director Office	083B	116	1	140	140	24	55%	255	\$	280 \$	71,273					
1.5.3	Associate Director Office			1	120	120	120	55%	218	\$	280 \$	61,091					
1.5.4	Administrative Conference Room			1	300	300	300	55%	545	\$	280 \$	152,727					
1.5.5	Business Manager Office			1	120	120	120	55%	218	\$	280 \$	61,091					
1.5.6	Quality Manager Office	097	215	1	120	120	-95	55%	218	\$	280 \$	61,091					
1.5.7	Pathologist Office	083A, 114	256	4	120	480	224	55%	873	\$	280 \$	244,364					
1.5.8	Open Office			25	60	1,500	1,500	55%	2,727	\$	260 \$	709,091					

**State of Montana**  
**Combined State Lab Study**  
**June 6, 2018**



**Option 1B**

1.5.9	Library/Rounds Room	083	122	1	300	300	178	55%	545	\$ 280	\$ 152,727
1.5.10	Conference Room			2	120	240	240	55%	436	\$ 280	\$ 122,182
1.5.11	Multipurpose/Seminar Room	060	629	1	800	800	171	55%	1,455	\$ 300	\$ 436,364
1.5.12	Break Room	101	300	1	600	600	300	55%	1,091	\$ 300	\$ 327,273
1.5.13	Shipping			1	120	120	120	55%	218	\$ 300	\$ 65,455
1.5.14	Staff Lockers			1	300	300	300	55%	545	\$ 450	\$ 245,455
1.5.15	Storage	075	318	1	1,000	1,000	682	55%	1,818	\$ 250	\$ 454,545
1.5.16	Server Room	100	308	1	120	120	-188	55%	218	\$ 300	\$ 65,455
Subtotal - Veterinary Diagnostic Lab				11,549		27,635	16,086		50,245		\$ 21,747,318

<b>4.0 ANALYTICAL LAB</b>						
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF
4.1	<b>Laboratories &amp; Support</b>		5,055		6,414	1,359
4.1.1	<b>Feed &amp; Fertilizer</b>					
4.1.1.1	Feed/Fertilizer Sample Prep	001A, 001B	545	1	484	484
4.1.1.2	Feed/Fertilizer Sample Prep & Balance	012	216	1	242	242
4.1.1.3	Feed/Fertilizer Chemistry Lab	019, 039	758	1	726	726
4.1.1.4	ICP Room	016, 016A	263	1	242	242
4.1.5	<b>Pesticide &amp; Groundwater</b>					
4.1.5.1	Pesticide Sample Prep	020	165	1	182	182
4.1.5.2	Low-Level Pesticide/Groundwater Laboratory	001C	442	1	484	484
4.1.5.3	Medium-Level Pesticide Laboratory	014	452	1	484	484
4.1.5.4	High-Level Pesticide Laboratory	031	150	1	242	242
4.1.5.5	Pesticide LCMS	024	248	1	484	484
4.1.10	<b>Shared Space</b>					
4.1.10.1	Feed/Fertilizer/Pesticide Lab	021, 038	649	1	726	726
4.1.10.2	Feed/Pesticide GCMS	025	354	1	484	484
4.1.10.3	Freezer/Standards Room	034	107	1	121	121
4.1.10.4	Oven Room	038A	29	1	242	242
4.1.10.5	Cooler Room	033	43	1	182	182
4.1.10.6	Secured Sample Storage			1	121	121
4.1.10.7	Hazardous Waste	032, 036	100	1	242	242
4.1.10.8	Chemical Storage	013	195	1	242	242
4.1.10.9	Receiving & Storage	001C	339	1	484	484
4.2	<b>Office &amp; Support</b>		1,653		1,263	-390
4.2.1	Receiving & Reception	010	367	1	363	363
4.2.2	Bureau Chief Office	009	215	1	140	140
4.2.3	Program Managers Office	011	161	1	140	140
4.2.4	Staff Office	023, 026	578	1	300	300
4.2.5	Office Work Room	010	111	1	120	120
4.2.6	Conference Room			1	200	200
4.2.7	Break Room	008	221	0	200	0
Subtotal - Analytical Lab				6,708	7,677	969

<b>SUMMARY</b>	<b>Existing NSF</b>	<b>18,257</b>	<b>Proposed NSF</b>	<b>35,312</b>	<b>17,055</b>	<b>Prop. GSF</b>	<b>64,204</b>	<b>Const. Cost</b>	<b>\$27,345,573</b>
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<b>CONSTRUCTION COST SUMMARY (New Building)</b>		
<b>Building Costs</b>		
Building Construction		\$ 27,345,573
Sitework		\$ 2,000,000
Site Utilities		\$ 1,000,000
<b>Contingency</b>		
Design Contingency	10%	\$ 3,034,557
<b>Escalation from June 2018 to June 2020</b>		
Annual Escalation Rate	4%	\$ 2,723,818.61
<b>Construction Cost (New Building)</b>		\$ 36,103,949
1. Construction Cost per GSF =		\$ 562.33
2. Not including FFE, A/V, design fees, commissioning, testing		

**Renovation in Marsh Lab Facility**

**2.0 WOOL LAB**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
2.1	<b>Wool Lab</b>		<b>4,781</b>			<b>4,315</b>	<b>-466</b>		<b>6,346</b>		<b>\$ 1,157,007</b>
2.1.1	Receiving Garage & Sample Storage	008,010	1,563	1	1,452	1,452	-111	68%	2,135	\$ 100	\$ 213,529
2.1.2	Analytical Laboratory	102	292	1	363	363	71	68%	534	\$ 275	\$ 146,801
2.1.3	Wet Chemistry Laboratory	001,003,004	1,090	1	484	484	-606	68%	712	\$ 275	\$ 195,735
2.1.4	45-Person Classroom	101	458	1	908	908	450	68%	1,335	\$ 275	\$ 367,206
2.1.5	Director Office	107	157	1	140	140	-17	68%	206	\$ 150	\$ 30,882
2.1.6	Open Office	108	238	1	242	242	4	68%	356	\$ 150	\$ 53,382
2.1.7	Storage	002,103,105, Attic	825	1	726	726	-99	68%	1,068	\$ 140	\$ 149,471
2.1.8	Vacated Office	106	158	1	0	0	-158	68%	0	-	-
<b>Subtotal - Wool Lab</b>			<b>4,781</b>			<b>4,315</b>	<b>-466</b>		<b>6,346</b>		<b>\$ 1,157,007</b>

**5.0 SEED LAB**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
5.1	<b>Seed Lab</b>		<b>1,763</b>			<b>2,498</b>	<b>735</b>		<b>3,674</b>		<b>\$ 866,949</b>
5.1.1	Receiving	040	94	1	182	182	88	68%	268	\$ 250	\$ 66,912
5.1.2	Purity Laboratory	054	546	1	484	484	-62	68%	712	\$ 275	\$ 195,735
5.1.3	Dividing Room	051	105	1	121	121	16	68%	178	\$ 275	\$ 48,934
5.1.4	Germination Laboratory	024	468	1	726	726	258	68%	1,068	\$ 275	\$ 293,603
5.1.5	Germinator/Growth Chamber Room	038	169	1	242	242	73	68%	356	\$ 275	\$ 97,868
5.1.6	Sample Storage	043, Trailer	240	1	363	363	123	68%	534	\$ 150	\$ 80,074
5.1.7	Director Office	027	141	1	140	140	-1	68%	206	\$ 150	\$ 30,882
5.1.8	Staff Area			4	60	240	240	68%	353	\$ 150	\$ 52,941
<b>Subtotal - Seed Lab</b>			<b>1,763</b>			<b>2,498</b>	<b>735</b>		<b>3,674</b>		<b>\$ 866,949</b>

**6.0 PULSE LAB**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
6.1	<b>Pulse Lab</b>		<b>751</b>			<b>3,404</b>	<b>2,653</b>		<b>5,006</b>		<b>\$ 1,373,860</b>
6.1.1	Sample Processing Laboratory	024	312	1	726	726	414	68%	1,068	\$ 250	\$ 266,912
6.1.2	Molecular Biology Laboratory	021	287	1	726	726	439	68%	1,068	\$ 275	\$ 293,603
6.1.3	Nematode Processing Laboratory			1	182	182	182	68%	268	\$ 275	\$ 73,603
6.1.4	Germinator/Growth Chamber Room	038	42	1	182	182	140	68%	268	\$ 275	\$ 73,603
6.1.5	Cold Room			1	121	121	121	68%	178	\$ 400	\$ 71,176
6.1.6	Laboratory Storage			1	121	121	121	68%	178	\$ 275	\$ 48,934
6.1.7	Greenhouse			1	484	484	484	68%	712	\$ 400	\$ 284,706
6.1.8	Headhouse			1	242	242	242	68%	356	\$ 350	\$ 124,559
6.1.9	Director Office	036	110	1	140	140	30	68%	206	\$ 150	\$ 30,882
6.1.10	Staff Area			8	60	480	480	68%	706	\$ 150	\$ 105,882
<b>Subtotal - Pulse Lab</b>			<b>751</b>			<b>3,404</b>	<b>2,653</b>		<b>5,006</b>		<b>\$ 1,373,860</b>

SUMMARY	Existing NSF	7,295	Proposed NSF	10,217	2,922	Prop. GSF	15,025	Const. Cost	\$ 3,397,816
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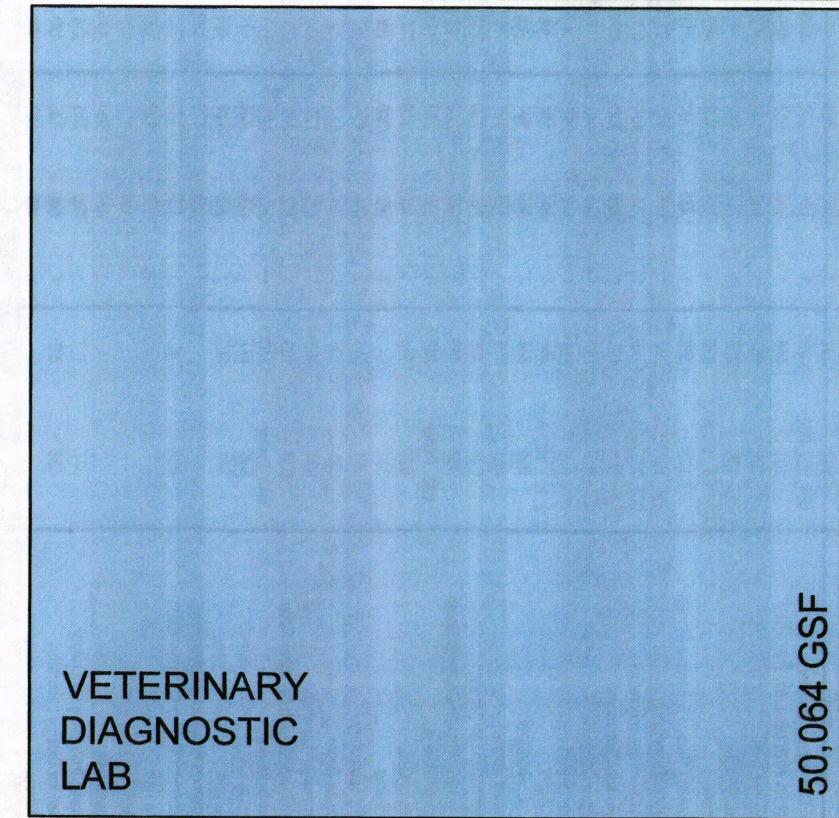
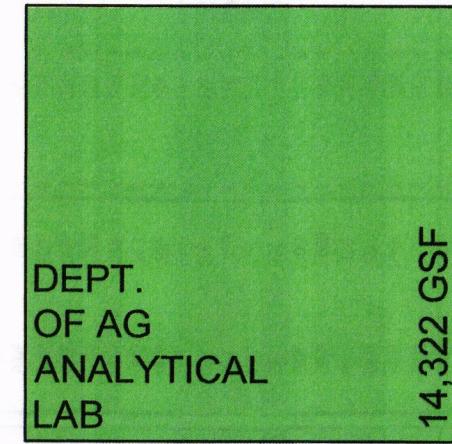
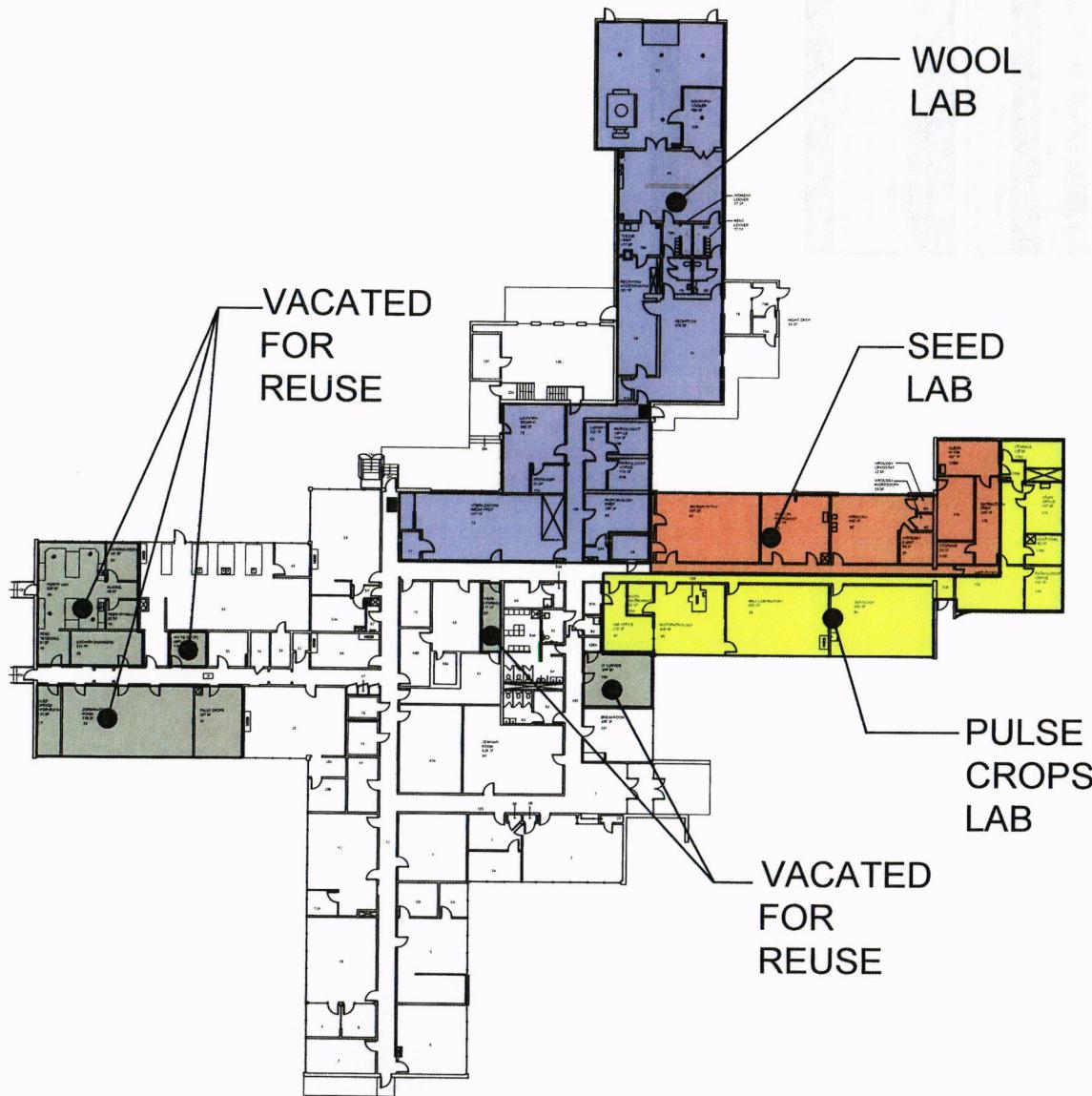
**CONSTRUCTION COST SUMMARY (Renovation)**

Building Costs
Building Construction \$ 3,397,816
Contingency
Design Contingency 15% \$ 509,672
Escalation from June 2018 to June 2021
Annual Escalation Rate 4% \$ 487,904.66
Construction Cost (Renovation) \$ 4,395,393
1. Construction Cost per GSF = \$ 292.54
2. Not including FFE, A/V, design fees, commissioning, testing

**TOTAL PROJECT COST SUMMARY**

Project Costs
Construction Cost - New Building \$ 36,103,949
Construction Cost - Renovation \$ 4,395,393
Project Associated Costs 25% \$ 10,124,835.47
Total Project Cost \$ 50,624,177

## Option 1B



## OPTION 1C

Option 1C is similar to Option 1B with the key difference being that the Wool Lab remains where it is currently located and is not included in the renovated area of Marsh Lab. This option provides a new building that will house the Dept. of Livestock Veterinary Diagnostic Laboratory, and the Department of Agriculture Analytical Laboratory and continues with a renovation that includes accommodation for the Seed Lab and Pulse Crops Lab in space vacated by the VDL. The new building in this scenario is still projected to have a total gross square footage of 64,204, but the renovation will only include the 7,719 net square feet needed to house the Seed and Pulse Labs. This will retain additional space vacated by the VDL available for reuse.

### VACATED SPACE

The following list shows the amount of net square footage that would be vacated and available for reuse under Option 1C. As previously stated, no costs have been provided for retrofit or repurposing of these facilities.

McCall Hall	6,708 nsf
Marsh Laboratory	7,295 nsf
<b>Total</b>	<b>14,003 nsf</b>

### CONSTRUCTION AND PROJECT COSTS

Line item costs for the new building shown in the attached room list for Option 1C were established in accordance with the Baseline Option as were the assumptions for site/utility costs, contingency and escalation. The line item costs for the renovation have been adjusted to account for the reuse of the existing shell, some corridor walls and other systems. The design contingency for all renovated spaces has been adjusted to 15% to account for unforeseen conditions and potential remediation. The construction of the new building has been escalated at 4% to an assumed mid-point of construction in the Summer of 2020 while the renovated areas have been escalated for one additional year to account for required phasing. As shown on the attached room list, Option 1C presently shows the construction cost for the new building at approximately \$36,100,000 and a renovation cost at approximately \$3,270,000. A project soft cost burden of 25% has been assumed bringing the total project costs for Option 1C to approximately \$49,220,000.



SPACE SUMMARY		Existing Area (Net)		Proposed Area (Net)		Proposed Area (Gross)		Estimated Cost	
New Building									
<b>1.0 VETERINARY DIAGNOSTIC LAB</b>									
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF
1.1	Receiving/Accessioning		424			1,573	1,149		\$ 940,500
1.1.1	Walk-In Samples			1	363	363	363	55%	660
1.1.2	Conference Room			1	242	242	242	55%	440
1.1.3	Unisex Restroom			1	121	121	121	55%	220
1.1.4	Delivery and Night Drop-Off Vestibule	076A	33	1	121	121	88	55%	220
1.1.5	Processing & Accessioning	078	391	1	726	726	335	55%	1,320
1.2	Necropsy & Prep		2,623			4,599	1,976		\$ 4,862,909
1.2.1	Necropsy Receiving	082	801	1	363	363	-438	55%	660
1.2.2	Live Animal Holding	082	115	1	363	363	248	55%	660
1.2.3	Tissue Trimming / Formalin Prep	078A	117	1	242	242	125	55%	440
1.2.4	BSL-2 Necropsy	081	622	1	1,089	1,089	467	55%	1,980
1.2.5	Evidence Storage	082	90	1	121	121	31	55%	220
1.2.6	Photography & Drug Storage			1	242	242	242	55%	440
1.2.7	Outgoing Cooler	082A	94	1	182	182	88	55%	331
1.2.8	Incoming Cooler w/ nightdrop	082A	94	1	182	182	88	55%	331
1.2.9	Lockers, Shower, Gowning & Boot Room	079A, 080A	330	1	1,089	1,089	759	55%	1,980
1.2.10	Necropsy Storage			1	121	121	121	55%	220
1.2.11	Incinerator	082	360	1	484	484	124	55%	880
1.2.12	Formalin fixed storage		0	1	121	121	121	55%	220
1.3	Laboratory Sections & Support		5,668			12,043	6,375		\$ 9,121,364
<i>Clinical Pathology 1.3.1</i>									
1.3.1.1	Clinical Pathology Laboratory	088	382	1	726	726	344	55%	1,320
1.3.1.2	Clinical Pathology Equipment Room			1	121	121	121	55%	220
1.3.1.3	Clinical Pathology Microscopy Room			1	121	121	121	55%	400
<i>Histology 1.3.2</i>									
1.3.2.1	Histology Laboratory	096	409	1	726	726	317	55%	1,320
1.3.2.2	Histology Equipment Room	096A	65	1	182	182	117	55%	331
1.3.2.3	Histology Slide/Block Storage	067, 97A	152	1	363	363	211	55%	660
<i>Bacteriology 1.3.3</i>									
1.3.3.1	Bacteriology Laboratory	087	584	1	726	726	142	55%	1,320
1.3.3.2	Bacteriology Dirty Room	084	284	1	121	121	-163	55%	220
1.3.3.3	Bacteriology Microscopy			1	121	121	121	55%	331
1.3.3.4	Bacteriology Equipment	086	81	1	182	182	101	55%	331
<i>Virology 1.3.4</i>									
1.3.4.1	Virology Laboratory	090, 093	452	1	726	726	274	55%	1,320
1.3.4.2	Virology Fluorescent Microscopy	092	23	1	121	121	98	55%	220
1.3.4.3	Virology Equipment Room	091	90	1	182	182	92	55%	331
1.3.4.5	Virology Clean Room			1	121	121	121	55%	220
1.3.4.6	Virology Dirty Room			1	182	182	182	55%	331
<i>Serology 1.3.5</i>									
1.3.5.1	Serology Laboratory	094	608	1	726	726	118	55%	1,320
1.3.5.2	Serology Centrifuge & Liquid Handling			1	182	182	182	55%	331
1.3.5.3	Serology Equipment Room			1	182	182	182	55%	350
<i>Molecular Diagnostics 1.3.6</i>									
1.3.6.1	Molecular Diagnostics Sample Prep			1	363	363	363	55%	660
1.3.6.2	Molecular Diagnostics Extraction	116	346	1	363	363	17	55%	660
1.3.6.3	Molecular Diagnostics Clean Room	116B	181	1	182	182	1	55%	331
1.3.6.4	Molecular Diagnostics Amplification	112	257	1	182	182	-76	55%	330
1.3.6.5	Molecular Diagnostics Freezer Room			1	121	121	121	55%	220
1.3.6.6	Molecular Diagnostics Storage	116F	68	1	121	121	53	55%	220
<i>DNA Sequencing 1.3.7</i>									
1.3.7.1	DNA Sequencing Laboratory Suite			1	726	726	726	55%	1,320
<i>Milk 1.3.8</i>									
1.3.8.1	Milk Laboratory	095	603	1	1,089	1,089	486	55%	1,980
1.3.8.2	Milk Laboratory Equipment			1	363	363	363	55%	660
<i>Food Safety 1.3.9</i>									
1.3.9.1	Food Safety Laboratory			1	726	726	726	55%	1,320
1.3.9.2	Food Safety Sterilization & Equipment			1	121	121	121	55%	220
<i>Shared Laboratory Support 1.3.10</i>									
1.3.10.1	Sterilization, Glassware & Pure Water	73	717	1	726	726	9	55%	1,320
1.3.10.2	Media Prep Lab	073	100	1	121	121	21	55%	220
1.3.10.3	Biohazard Sterilization	075A	81	1	121	121	40	55%	220
1.3.10.4	Freezer Farm			1	363	363	363	55%	660
1.3.10.5	Hazardous Waste	082	115	1	242	242	127	55%	440
1.3.10.6	Laundry Room	075	70	1	121	121	51	55%	220
1.3.10.7	Chemical Storage			1	182	182	182	55%	330
1.4	Biocontainment		0			2,360	2,360		\$ 3,185,091
1.4.1	Lockers, Shower, Gowning & Boot Room			1	363	363	363	55%	660
1.4.2	Autoclave Sterilization			1	182	182	182	55%	331
1.4.3	Equipment Decontamination Airlock			1	121	121	121	55%	220
1.4.4	BSL-3 Laboratory			1	726	726	726	55%	1,320
1.4.5	BSL-3 Specialized Laboratory			2	121	242	242	55%	440
1.4.6	BSL-2 Enhanced Necropsy			1	726	726	726	55%	1,320
1.5	Office & Support		2,834			7,060	4,226		\$ 3,637,455
1.5.1	Reception and Waiting	077	570	1	800	800	230	55%	1,455
1.5.2	Director Office	083B	116	1	140	140	24	55%	255
1.5.3	Associate Director Office			1	120	120	120	55%	218
1.5.4	Administrative Conference Room			1	300	300	300	55%	545
1.5.5	Business Manager Office			1	120	120	120	55%	218
1.5.6	Quality Manager Office	097	215	1	120	120	-95	55%	218
1.5.7	Pathologist Office	083A, 114	256	4	120	480	224	55%	873
1.5.8	Open Office			25	60	1,500	1,500	55%	2,727

**State of Montana**  
**Combined State Lab Study**  
**June 6, 2018**



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**Option 1C**

1.5.9	Library/Rounds Room	083	122	1	300	300	178	55%	545	\$ 280	\$ 152,727
1.5.10	Conference Room			2	120	240	240	55%	436	\$ 280	\$ 122,182
1.5.11	Multipurpose/Seminar Room	060	629	1	800	800	171	55%	1,455	\$ 300	\$ 436,364
1.5.12	Break Room	101	300	1	600	600	300	55%	1,091	\$ 300	\$ 327,273
1.5.13	Shipping			1	120	120	120	55%	218	\$ 300	\$ 65,455
1.5.14	Staff Lockers			1	300	300	300	55%	545	\$ 450	\$ 245,455
1.5.15	Storage	075	318	1	1,000	1,000	682	55%	1,818	\$ 250	\$ 454,545
1.5.16	Server Room	100	308	1	120	120	-188	55%	218	\$ 300	\$ 65,455
Subtotal - Veterinary Diagnostic Lab				11,549		27,635	16,086		50,245		\$ 21,747,318

<b>4.0 ANALYTICAL LAB</b>						
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF
4.1	<b>Laboratories &amp; Support</b>		5,055		6,414	1,359
	<i>Feed &amp; Fertilizer</i>					
4.1.1	Feed/Fertilizer Sample Prep	001A, 001B	545	1	484	484
4.1.2	Feed/Fertilizer Sample Prep & Balance	012	216	1	242	242
4.1.3	Feed/Fertilizer Chemistry Lab	019, 039	758	1	726	726
4.1.4	ICP Room	016, 016A	263	1	242	242
	<i>Pesticide &amp; Groundwater</i>					
4.1.5	Pesticide Sample Prep	020	165	1	182	182
4.1.6	Low-Level Pesticide/Groundwater Laboratory	001C	442	1	484	484
4.1.7	Medium-Level Pesticide Laboratory	014	452	1	484	484
4.1.8	High-Level Pesticide Laboratory	031	150	1	242	242
4.1.9	Pesticide LCMS	024	248	1	484	484
	<i>Shared Space</i>					
4.1.10	Feed/Fertilizer/Pesticide Lab	021, 038	649	1	726	726
4.1.11	Feed/Pesticide GCMS	025	354	1	484	484
4.1.12	Freezer/Standards Room	034	107	1	121	121
4.1.13	Oven Room	038A	29	1	242	242
4.1.14	Cooler Room	033	43	1	182	182
4.1.15	Secured Sample Storage			1	121	121
4.1.16	Hazardous Waste	032, 036	100	1	242	242
4.1.17	Chemical Storage	013	195	1	242	242
4.1.18	Receiving & Storage	001C	339	1	484	484
4.2	<b>Office &amp; Support</b>		1,653		1,263	-390
4.2.1	Receiving & Reception	010	367	1	363	363
4.2.2	Bureau Chief Office	009	215	1	140	140
4.2.3	Program Managers Office	011	161	1	140	140
4.2.4	Staff Office	023, 026	578	1	300	300
4.2.5	Office Work Room	010	111	1	120	120
4.2.6	Conference Room			1	200	200
4.2.7	Break Room	008	221	0	200	0
Subtotal - Analytical Lab				6,708	7,677	969
					13,958	\$ 5,598,255

<b>SUMMARY</b>	<b>Existing NSF</b>	<b>18,257</b>	<b>Proposed NSF</b>	<b>35,312</b>	<b>17,055</b>	<b>Prop. GSF</b>	<b>64,204</b>	<b>Const. Cost</b>	<b>\$ 27,345,573</b>
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<b>CONSTRUCTION COST SUMMARY (New Building)</b>			
<b>Building Costs</b>			
Building Construction		\$ 27,345,573	
Sitework		\$ 2,000,000	
Site Utilities		\$ 1,000,000	
<b>Contingency</b>			
Design Contingency	10%	\$ 3,034,557	
<b>Escalation from June 2018 to June 2020</b>			
Annual Escalation Rate	4%	\$ 2,723,818.61	
<b>Construction Cost (New Building)</b>			
1. Construction Cost per GSF =		\$ 562.33	
2. Not including FFE, A/V, design fees, commissioning, testing			

## **Renovation in Marsh Lab Facility**

2.0 WOOL LAB							Net-to-Gross			
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	GSF	Cost/GSF	Cost
2.1	Wool Lab		4,781			4,315	-466	6,346	\$	1,157,007
2.1.1	Receiving Garage & Sample Storage	008, 010	1,563	1	1,452	1,452	-111	68%	2,135	\$ 213,529
2.1.2	Analytical Laboratory	102	292	1	363	363	71	68%	534	\$ 275 \$ 146,801
2.1.3	Wet Chemistry Laboratory	001, 003, 004	1,090	1	484	484	-606	68%	712	\$ 275 \$ 195,735
2.1.4	45-Person Classroom	101	458	1	908	908	450	68%	1,335	\$ 367,206
2.1.5	Director Office	107	157	1	140	140	-17	68%	206	\$ 150 \$ 30,882
2.1.6	Open Office	108	238	1	242	242	4	68%	356	\$ 150 \$ 53,382
2.1.7	Storage	002, 103, 105, Attic	825	1	726	726	-99	68%	1,068	\$ 140 \$ 149,471
2.1.8	Vacated Office	106	158	1	0	0	-158	68%	0	\$ - \$ -
Subtotal - Wool Lab			4,781			4,315	-466	6,346	\$	1,157,007

PULSE LAB											
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
6.1	Pulse Lab		751			3,404	2,653		5,006		\$ 1,373,860
6.1.1	Sample Processing Laboratory	024	312	1	726	726	414	68%	1,068	\$ 250	\$ 266,912
6.1.2	Molecular Biology Laboratory	021	287	1	726	726	439	68%	1,068	\$ 275	\$ 293,603
6.1.3	Nematode Processing Laboratory			1	182	182	182	68%	268	\$ 275	\$ 73,603
6.1.4	Germinator/Growth Chamber Room	038	42	1	182	182	140	68%	268	\$ 275	\$ 73,603
6.1.5	Cold Room			1	121	121	121	68%	178	\$ 400	\$ 71,176
6.1.6	Laboratory Storage			1	121	121	121	68%	178	\$ 275	\$ 48,934
6.1.7	Greenhouse			1	484	484	484	68%	712	\$ 400	\$ 284,706
6.1.8	Headhouse			1	242	242	242	68%	356	\$ 350	\$ 124,559
6.1.9	Director Office	036	110	1	140	140	30	68%	206	\$ 150	\$ 30,882
6.1.10	Staff Area			8	60	480	480	68%	706	\$ 150	\$ 105,882
Subtotal - Pulse Lab				751		3,404	2,653		5,006		\$ 1,373,860

<b>SUMMARY</b>	Existing NSF	5,532	Proposed NSF	7,719	2,187	Prop. GSF	11,351	Const. Cost	\$2,530,868
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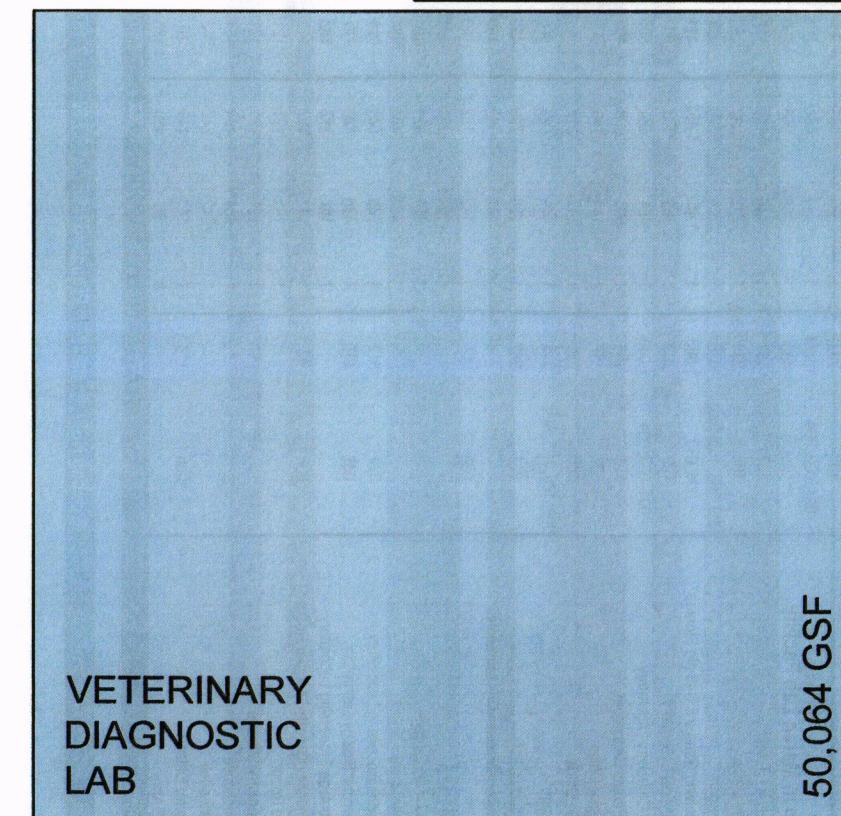
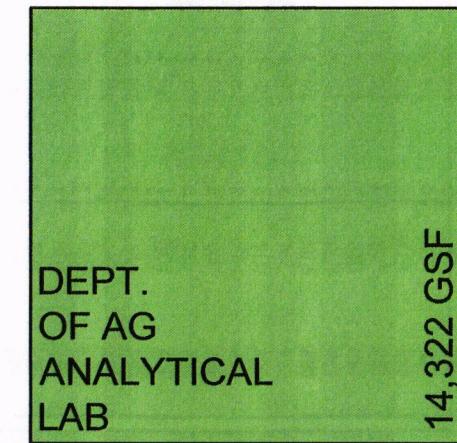
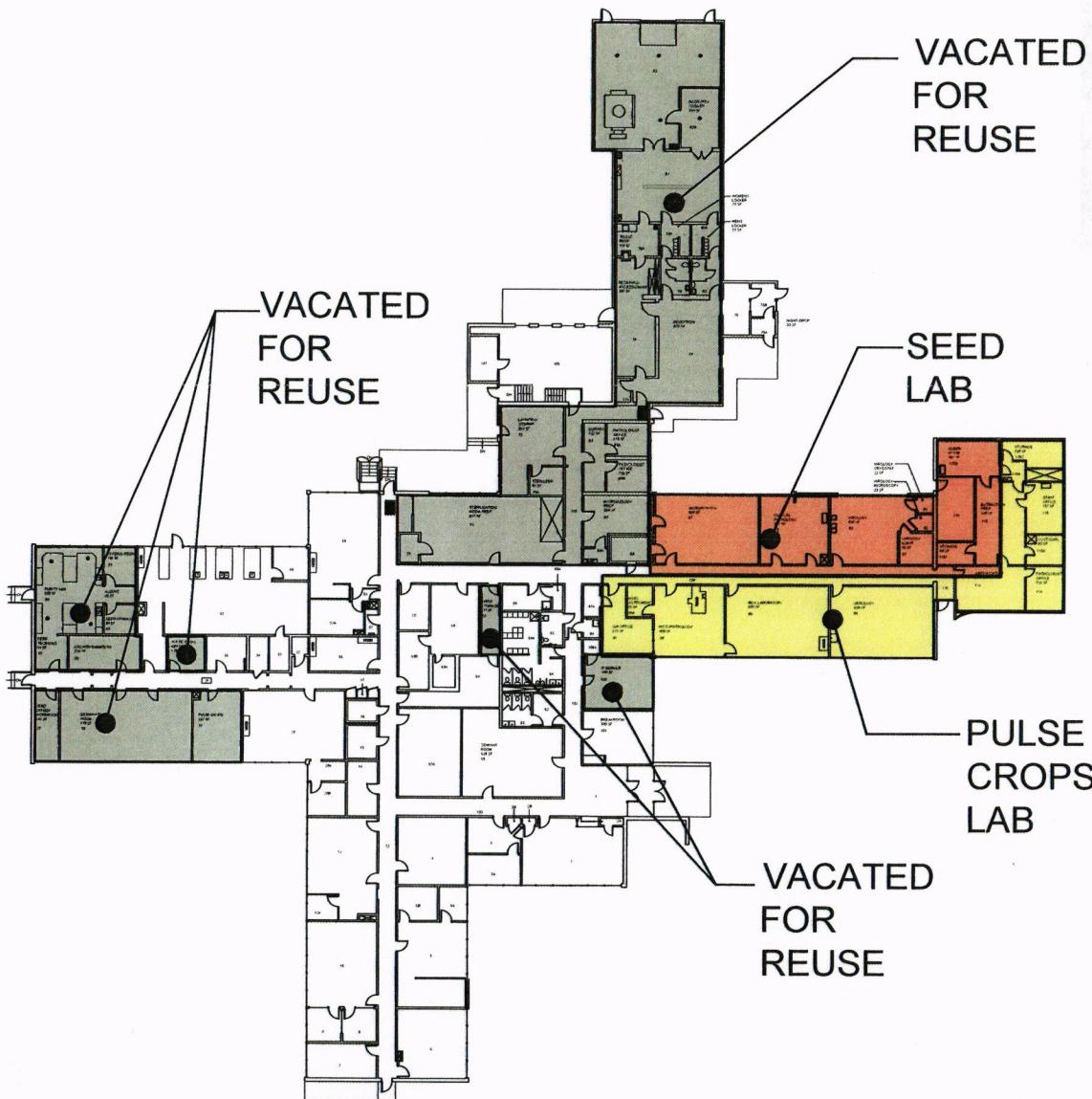
### **CONSTRUCTION COST SUMMARY (Renovation)**

<b>Building Costs</b>		
Building Construction		\$ 2,530,868
<b>Contingency</b>		
Design Contingency	15%	\$ 379,630
<b>Escalation from June 2018 to June 2021</b>		
Annual Escalation Rate	4%	\$ 363,416.40
<b>Construction Cost (Renovation)</b>		
1. Construction Cost per GSF =		\$ 288.41
2. Not including FFE, AV, design fees, commissioning, testing		

## TOTAL PROJECT COST SUMMARY

<b>Project Costs</b>	
Construction Cost - New Building	\$ 36,103,949
Construction Cost - Renovation	\$ 3,273,914
Project Associated Costs	25%
	\$ 9,844,465.70
<b>Total Project Cost</b>	<b>\$ 49,222,328</b>

## Option 1C



MARSH LAB SCALE: 1" = 40'-0"

SCALE: 1" = 40'-0"

# **NEW BUILDING**

## OPTION 1D

Option 1D is similar to Option 1C with the key difference being that the Seed Lab remains where it is currently located in the west wing of Marsh Lab and is not moved to renovated space. Under this scenario, the Pulse Crops Lab would move into a small renovated portion of the area vacated by the VDL. Moving the Pulse Crops Lab would allow the Seed Lab to grow into the adjacent spaces currently occupied by the pulse Crops lab which would effectively alleviate their seed storage problems with little or no renovation needed. The Pulse Lab and the Seed Lab currently share a receiving area, but the lab directors for each have stated that being separated by 200 feet or so would not present a hardship as long as they were still located in the same building. The new building in this scenario is still projected to have a total gross square footage of 64,204, but the renovation will only include the 3,404 net square feet needed to house the Pulse Crops Labs. This will have a net zero effect on the quantity of vacated space in Marsh Lab.

### VACATED SPACE

The following list shows the amount of net square footage that would be vacated and available for reuse under Option 1D. As previously stated, no costs have been provided for retrofit or repurposing of these facilities.

McCall Hall	6,708 nsf
Marsh Laboratory	7,295 nsf
Total	14,003 nsf

### CONSTRUCTION AND PROJECT COSTS

Line item costs for the new building shown in the attached room list for Option 1D were established in accordance with the Baseline Option as were the assumptions for site/utility costs, contingency and escalation. The line item costs for the renovation have been adjusted to account for the reuse of the existing shell, some corridor walls and other systems. The design contingency for all renovated spaces has been adjusted to 15% to account for unforeseen conditions and potential remediation. The construction of the new building has been escalated at 4% to an assumed mid-point of construction in the Summer of 2020 while the renovated areas have been escalated for one additional year to account for required phasing. As shown on the attached room list, Option 1D presently shows the construction cost for the new building at approximately \$36,100,000 and a renovation cost at approximately \$1,780,000. A project soft cost burden of 25% has been assumed bringing the total project costs for Option 1D to approximately \$47,350,000.



**LPW**  
**ARCHITECTURE**

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**Option 1D**

SPACE SUMMARY		Existing Area (Net)		Proposed Area (Net)		Proposed Area (Gross)		Estimated Cost									
<b>New Building</b>																	
<b>1.0 VETERINARY DIAGNOSTIC LAB</b>																	
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost						
1.1	Receiving/Accessioning		424			1,573	1,149		2,860	\$	940,500						
1.1.1	Walk-In Samples			1	363	363	363	55%	660	\$	300 \$ 198,000						
1.1.2	Conference Room			1	242	242	242	55%	440	\$	300 \$ 132,000						
1.1.3	Unisex Restroom			1	121	121	121	55%	220	\$	350 \$ 77,000						
1.1.4	Delivery and Night Drop-Off Vestibule	076A	33	1	121	121	88	55%	220	\$	325 \$ 71,500						
1.1.5	Processing & Accessioning	078	391	1	726	726	335	55%	1,320	\$	350 \$ 462,000						
1.2	Necropsy & Prep		2,623			4,599	1,976		8,362	\$	4,862,909						
1.2.1	Necropsy Receiving	082	801	1	363	363	-438	55%	660	\$	400 \$ 264,000						
1.2.2	Live Animal Holding	082	115	1	363	363	248	55%	660	\$	400 \$ 264,000						
1.2.3	Tissue Trimming / Formalin Prep	078A	117	1	242	242	125	55%	440	\$	450 \$ 198,000						
1.2.4	BSL-2 Necropsy	081	622	1	1,089	1,089	467	55%	1,980	\$	750 \$ 1,485,000						
1.2.5	Evidence Storage	082	90	1	121	121	31	55%	220	\$	400 \$ 88,000						
1.2.6	Photography & Drug Storage			1	242	242	242	55%	440	\$	400 \$ 176,000						
1.2.7	Outgoing Cooler	082A	94	1	182	182	88	55%	331	\$	500 \$ 165,455						
1.2.8	Incoming Cooler w/ nightdrop	082A	94	1	182	182	88	55%	331	\$	500 \$ 165,455						
1.2.9	Lockers, Shower, Gowning & Boot Room	079A, 080A	330	1	1,089	1,089	759	55%	1,980	\$	550 \$ 1,089,000						
1.2.10	Necropsy Storage			1	121	121	121	55%	220	\$	400 \$ 88,000						
1.2.11	Incinerator	082	360	1	484	484	124	55%	880	\$	900 \$ 792,000						
1.2.12	Formalin fixed storage		0	1	121	121	121	55%	220	\$	400 \$ 88,000						
1.3	Laboratory Sections & Support		5,668			12,043	6,375		21,896	\$	9,121,364						
<i>Clinical Pathology 1.3.1</i>																	
1.3.1.1	Clinical Pathology Laboratory	088	382	1	726	726	344	55%	1,320	\$	400 \$ 528,000						
1.3.1.2	Clinical Pathology Equipment Room			1	121	121	121	55%	220	\$	350 \$ 77,000						
1.3.1.3	Clinical Pathology Microscopy Room			1	121	121	121	55%	220	\$	400 \$ 88,000						
<i>Histology 1.3.2</i>																	
1.3.2.1	Histology Laboratory	096	409	1	726	726	317	55%	1,320	\$	400 \$ 528,000						
1.3.2.2	Histology Equipment Room	096A	65	1	182	182	117	55%	331	\$	350 \$ 115,818						
1.3.2.3	Histology Slide/Block Storage	067, 97A	152	1	363	363	211	55%	660	\$	350 \$ 231,000						
<i>Bacteriology 1.3.3</i>																	
1.3.3.1	Bacteriology Laboratory	087	584	1	726	726	142	55%	1,320	\$	400 \$ 528,000						
1.3.3.2	Bacteriology Dirty Room	084	284	1	121	121	-163	55%	220	\$	400 \$ 88,000						
1.3.3.3	Bacteriology Microscopy			1	121	121	121	55%	220	\$	400 \$ 88,000						
1.3.3.4	Bacteriology Equipment	086	81	1	182	182	101	55%	331	\$	350 \$ 115,818						
<i>Virology 1.3.4</i>																	
1.3.4.1	Virology Laboratory	090, 093	452	1	726	726	274	55%	1,320	\$	400 \$ 528,000						
1.3.4.2	Virology Fluorescent Microscopy	092	23	1	121	121	98	55%	220	\$	400 \$ 88,000						
1.3.4.3	Virology Equipment Room	091	90	1	182	182	92	55%	331	\$	350 \$ 115,818						
1.3.4.4	Virology Clean Room			1	121	121	121	55%	220	\$	400 \$ 88,000						
1.3.4.6	Virology Dirty Room			1	182	182	182	55%	331	\$	400 \$ 132,364						
<i>Serology 1.3.5</i>																	
1.3.5.1	Serology Laboratory	094	608	1	726	726	118	55%	1,320	\$	400 \$ 528,000						
1.3.5.2	Serology Centrifuge & Liquid Handling			1	182	182	182	55%	331	\$	400 \$ 132,364						
1.3.5.3	Serology Equipment Room			1	182	182	182	55%	331	\$	350 \$ 115,818						
<i>Molecular Diagnostics 1.3.6</i>																	
1.3.6.1	Molecular Diagnostics Sample Prep			1	363	363	363	55%	660	\$	400 \$ 264,000						
1.3.6.2	Molecular Diagnostics Extraction	116	346	1	363	363	17	55%	660	\$	400 \$ 264,000						
1.3.6.3	Molecular Diagnostics Clean Room	116B	181	1	182	182	1	55%	331	\$	400 \$ 132,364						
1.3.6.4	Molecular Diagnostics Amplification	112	257	1	182	182	-76	55%	330	\$	400 \$ 132,000						
1.3.6.5	Molecular Diagnostics Freezer Room			1	121	121	121	55%	220	\$	350 \$ 77,000						
1.3.6.6	Molecular Diagnostics Storage	116F	68	1	121	121	53	55%	220	\$	350 \$ 77,000						
<i>DNA Sequencing 1.3.7</i>																	
1.3.7.1	DNA Sequencing Laboratory Suite			1	726	726	726	55%	1,320	\$	400 \$ 528,000						
<i>Milk 1.3.8</i>																	
1.3.8.1	Milk Laboratory	095	603	1	1,089	1,089	486	55%	1,980	\$	400 \$ 792,000						
1.3.8.2	Milk Laboratory Equipment			1	363	363	363	55%	660	\$	350 \$ 231,000						
<i>Food Safety 1.3.9</i>																	
1.3.9.1	Food Safety Laboratory			1	726	726	726	55%	1,320	\$	400 \$ 528,000						
1.3.9.2	Food Safety Sterilization & Equipment			1	121	121	121	55%	220	\$	600 \$ 132,000						
<i>Shared Laboratory Support 1.3.10</i>																	
1.3.10.1	Sterilization, Glassware & Pure Water	73	717	1	726	726	9	55%	1,320	\$	750 \$ 990,000						
1.3.10.2	Media Prep Lab	073	100	1	121	121	21	55%	220	\$	400 \$ 88,000						
1.3.10.3	Biohazard Sterilization	075A	81	1	121	121	40	55%	220	\$	750 \$ 165,000						
1.3.10.4	Freezer Farm			1	363	363	363	55%	660	\$	350 \$ 231,000						
1.3.10.5	Hazardous Waste	082	115	1	242	242	127	55%	440	\$	400 \$ 176,000						
1.3.10.6	Laundry Room	075	70	1	121	121	51	55%	220	\$	300 \$ 66,000						
1.3.10.7	Chemical Storage			1	182	182	182	55%	330	\$	400 \$ 132,000						
1.4	Biocontainment		0			2,360	2,360		4,291	\$	3,185,091						
1.4.1	Lockers, Shower, Gowning & Boot Room			1	363	363	363	55%	660	\$	550 \$ 363,000						
1.4.2	Autoclave Sterilization			1	182	182	182	55%	331	\$	650 \$ 215,091						
1.4.3	Equipment Decontamination Airlock			1	121	121	121	55%	220	\$	650 \$ 143,000						
1.4.4	BSL-3 Laboratory			1	726	726	726	55%	1,320	\$	800 \$ 1,056,000						
1.4.5	BSL-3 Specialized Laboratory			2	121	242	242	55%	440	\$	800 \$ 352,000						
1.4.6	BSL-2 Enhanced Necropsy			1	726	726	726	55%	1,320	\$	800 \$ 1,056,000						
1.5	Office & Support		2,834			7,060	4,226		12,836	\$	3,637,455						
1.5.1	Reception and Waiting	077	570	1	800	800	230	55%	1,455	\$	280 \$ 407,273						
1.5.2	Director Office	083B	116	1	140	140	24	55%	255	\$	280 \$ 71,273						
1.5.3	Associate Director Office			1	120	120	120	55%	218	\$	280 \$ 61,091						
1.5.4	Administrative Conference Room			1	300	300	300	55%	545	\$	280 \$ 152,727						
1.5.5	Business Manager Office			1	120	120	120	55%	218	\$	280 \$ 61,091						
1.5.6	Quality Manager Office	097	215	1	120	120	-95	55%	218	\$	280 \$ 61,091						
1.5.7	Pathologist Office	083A, 114	256	4	120	480	224	55%	873	\$	280 \$ 244,364						
1.5.8	Open Office			25	60	1,500	1,500	55%	2,727	\$	260 \$ 709,091						

**State of Montana**  
**Combined State Lab Study**  
**June 6, 2018**



**Option 1D**

1.5.9	Library/Rounds Room	083	122	1	300	300	178	55%	545	\$ 280	\$ 152,727
1.5.10	Conference Room			2	120	240	240	55%	436	\$ 280	\$ 122,182
1.5.11	Multipurpose/Seminar Room	060	629	1	800	800	171	55%	1,455	\$ 300	\$ 436,364
1.5.12	Break Room	101	300	1	600	600	300	55%	1,091	\$ 300	\$ 327,273
1.5.13	Shipping			1	120	120	120	55%	218	\$ 300	\$ 65,455
1.5.14	Staff Lockers			1	300	300	300	55%	545	\$ 450	\$ 245,455
1.5.15	Storage	075	318	1	1,000	1,000	682	55%	1,818	\$ 250	\$ 454,545
1.5.16	Server Room	100	308	1	120	120	-188	55%	218	\$ 300	\$ 65,455
Subtotal - Veterinary Diagnostic Lab				11,549		27,635	16,086		50,245		\$ 21,747,318

<b>4.0 ANALYTICAL LAB</b>						
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF
4.1	<b>Laboratories &amp; Support</b>		5,055		6,414	1,359
4.1.1	<b>Feed &amp; Fertilizer</b>					
4.1.1	Feed/Fertilizer Sample Prep	001A, 001B	545	1	484	484
4.1.2	Feed/Fertilizer Sample Prep & Balance	012	216	1	242	242
4.1.3	Feed/Fertilizer Chemistry Lab	019, 039	758	1	726	726
4.1.4	ICP Room	016, 016A	263	1	242	242
4.1.5	<b>Pesticide &amp; Groundwater</b>					
4.1.5	Pesticide Sample Prep	020	165	1	182	182
4.1.6	Low-Level Pesticide/Groundwater Laboratory	001C	442	1	484	484
4.1.7	Medium-Level Pesticide Laboratory	014	452	1	484	484
4.1.8	High-Level Pesticide Laboratory	031	150	1	242	242
4.1.9	Pesticide LCMS	024	248	1	484	484
4.1.10	<b>Shared Space</b>					
4.1.10	Feed/Fertilizer/Pesticide Lab	021, 038	649	1	726	726
4.1.11	Feed/Pesticide GCMS	025	354	1	484	484
4.1.12	Freezer/Standards Room	034	107	1	121	121
4.1.13	Oven Room	038A	29	1	242	242
4.1.14	Cooler Room	033	43	1	182	182
4.1.15	Secured Sample Storage			1	121	121
4.1.16	Hazardous Waste	032, 036	100	1	242	242
4.1.17	Chemical Storage	013	195	1	242	242
4.1.18	Receiving & Storage	001C	339	1	484	484
4.2	<b>Office &amp; Support</b>		1,653		1,263	-390
4.2.1	Receiving & Reception	010	367	1	363	363
4.2.2	Bureau Chief Office	009	215	1	140	140
4.2.3	Program Managers Office	011	161	1	140	140
4.2.4	Staff Office	023, 026	578	1	300	300
4.2.5	Office Work Room	010	111	1	120	120
4.2.6	Conference Room			1	200	200
4.2.7	Break Room	008	221	0	200	0
Subtotal - Analytical Lab				6,708		7,677
						969
						13,958
						\$ 5,598,255

<b>SUMMARY</b>	<b>Existing NSF</b>	<b>18,257</b>	<b>Proposed NSF</b>	<b>35,312</b>	<b>17,055</b>	<b>Prop. GSF</b>	<b>64,204</b>	<b>Const. Cost</b>	<b>\$ 27,345,573</b>
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<b>CONSTRUCTION COST SUMMARY (New Building)</b>			
<b>Building Costs</b>			
Building Construction		\$	27,345,573
Sitework		\$	2,000,000
Site Utilities		\$	1,000,000
<b>Contingency</b>			
Design Contingency	10%	\$	3,034,557
<b>Escalation from June 2018 to June 2020</b>			
Annual Escalation Rate	4%	\$	2,723,818.61
<b>Construction Cost (New Building)</b>			
1. Construction Cost per GSF =		\$	562.33
2. Not including FFE, A/V, design fees, commissioning, testing			



**Renovation in Marsh Lab Facility**

**6.0 PULSE LAB**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.
6.1	Pulse Lab		751			3,404	2,653
6.1.1	Sample Processing Laboratory	024	312	1	726	726	414
6.1.2	Molecular Biology Laboratory	021	287	1	726	726	439
6.1.3	Nematode Processing Laboratory			1	182	182	182
6.1.4	Germinator/Growth Chamber Room	038	42	1	182	182	140
6.1.5	Cold Room			1	121	121	121
6.1.6	Laboratory Storage			1	121	121	121
6.1.7	Greenhouse			1	484	484	484
6.1.8	Headhouse			1	242	242	242
6.1.9	Director Office	036	110	1	140	140	30
6.1.10	Staff Area			8	60	480	480
Subtotal - Pulse Lab			751			3,404	2,653

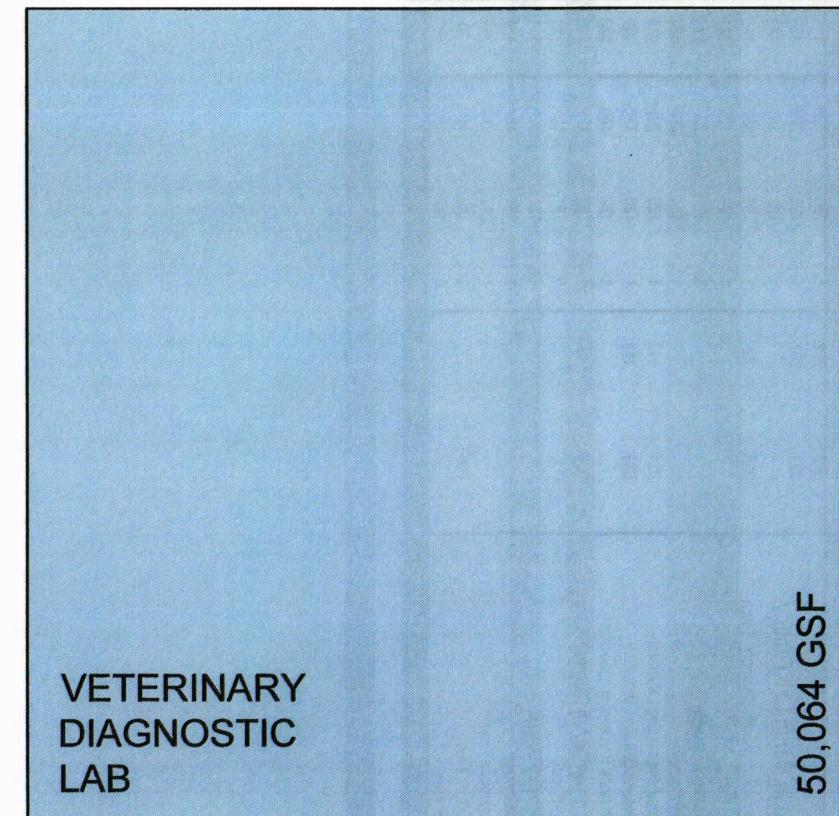
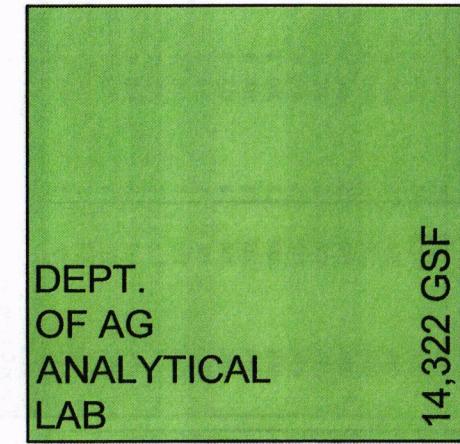
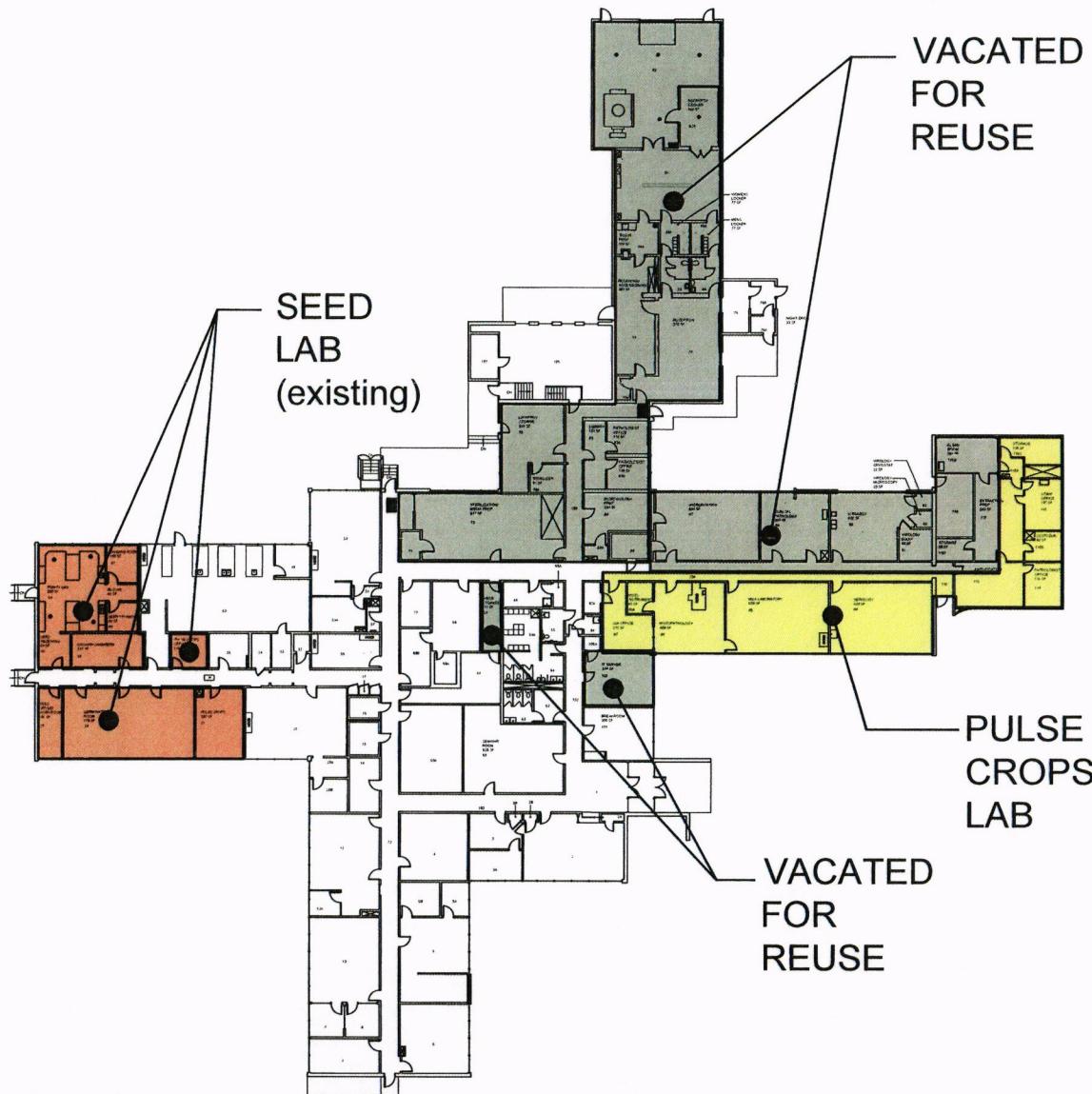
Net-to-Gross	GSF	Cost/GSF	Cost
	5,006		\$ 1,373,860
68%	1,068	\$ 250	\$ 266,912
68%	1,068	\$ 275	\$ 293,603
68%	268	\$ 275	\$ 73,603
68%	268	\$ 400	\$ 71,176
68%	178	\$ 275	\$ 48,934
68%	178	\$ 350	\$ 124,559
68%	712	\$ 150	\$ 30,882
68%	356	\$ 150	\$ 105,882
68%	206	\$ 150	\$ 1,373,860
68%	706	\$ 355.03	\$ 355.03

SUMMARY	Existing NSF	751	Proposed NSF	3,404	2,653	Prop. GSF	5,006	Const. Cost	\$ 1,373,860
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CONSTRUCTION COST SUMMARY (Renovation)		
<b>Building Costs</b>		
Building Construction		\$ 1,373,860
<b>Contingency</b>		
Design Contingency	15%	\$ 206,079
<b>Escalation from June 2018 to June 2021</b>		
Annual Escalation Rate	4%	\$ 197,277.55
<b>Construction Cost (Renovation)</b>		
1. Construction Cost per GSF =		\$ 355.03
2. Not including FFE, A/V, design fees, commissioning, testing		

TOTAL PROJECT COST SUMMARY		
<b>Project Costs</b>		
Construction Cost - New Building		\$ 36,103,949
Construction Cost - Renovation		\$ 1,777,217
Project Associated Costs	25%	\$ 9,470,291.37
<b>Total Project Cost</b>		<b>\$ 47,351,457</b>

## Option 1D



## **OPTION 2**

Option 2 is formulated with the intent to provide a new building to house the Dept. of Livestock Veterinary Diagnostic Laboratory and (possibly) the FWP Wildlife Laboratory on a site to be determined. The Department of Ag analytical Lab and the Pulse Crops Lab are then relocated in renovated space vacated by the Veterinary Diagnostic Laboratory in the Marsh Laboratory Facility. Under this basic scenario, the Wool Lab does not move and the Seed Lab remains in its present location in the west wing of Marsh Lab. Option 2 is broken into subsets – one scheme where the FWP Lab is accommodated in the new building and one where it remains in its current location. They are described below and designated Options 2A and 2B. Note that in all schemes under Option 2, McCall Hall is vacated and available for reuse, but that no monies have been identified in these options to provide renovation or retrofit to that facility.

### **OPTION 2A**

Option 2A provides a new building that will house the Dept. of Livestock Veterinary Diagnostic Laboratory and the FWP Wildlife Laboratory on a greenfield site in accordance with the scope and per gross square foot costs established in the Baseline Option. Upon completion of the new facility, the roughly 15,000 gross square feet vacated by the VDL in the Marsh Lab Facility can then be renovated to accommodate the Department of Ag Analytical Lab and the Pulse Crops Lab. The combined net square footage requested by these two departments is 11,281 net square feet which compares well with the existing 11,549 net square feet that the Veterinary Diagnostic lab currently occupies in the Marsh Facility.

A net to gross conversion of 55% has been assumed for the new building which is projected to have a total gross square footage of 58,965. If rooftop air handlers are allowed on the renovated areas of Marsh Lab, it is assumed that the floor plan layout will generally reuse existing restroom, mechanical, electrical and corridor spaces, achieving a net to gross ratio that is similar to what exists. A grossing factor of 68% has been shown for the renovation of Marsh Lab.

### **VACATED SPACE**

The following list shows the amount of net square footage that would be vacated and available for reuse under Option 2A. As previously stated, no costs have been provided for retrofit or repurposing of these facilities.

FWP Wildlife Laboratory	2,992 nsf
McCall Hall	6,708 nsf
<b>Total</b>	<b>9,700 nsf</b>

### **CONSTRUCTION AND PROJECT COSTS**

Line item costs for the new building shown in the attached room list for Option 2A were established in accordance with the Baseline Option as were the assumptions for site/utility costs, contingency and escalation. The line item costs for the renovation have been adjusted to account for the reuse of the existing shell, some corridor walls and other systems. The design contingency for all renovated spaces has been adjusted to 15% to account for unforeseen conditions and potential remediation. The construction of the new building has been escalated at 4% to an assumed mid-point of construction in the Summer of 2020 while the renovated areas have been escalated for one additional year to account for required phasing. As shown on the attached room list, Option 2A presently shows the construction cost for the new building at approximately \$33,725,000 and a renovation cost at approximately \$5,750,000. A project soft cost burden of 25% has been assumed bringing the total project costs for Option 2A to approximately \$49,340,000.

SPACE SUMMARY		Existing Area (Net)		Proposed Area (Net)		Proposed Area (Gross)		Estimated Cost	
New Building									
<b>1.0 VETERINARY DIAGNOSTIC LAB</b>									
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF
1.1	Receiving/Accessioning		424			1,573	1,149		\$ 940,500
1.1.1	Walk-In Samples			1	363	363	363	55%	660
1.1.2	Conference Room			1	242	242	242	55%	440
1.1.3	Unisex Restroom			1	121	121	121	55%	220
1.1.4	Delivery and Night Drop-Off Vestibule	076A	33	1	121	121	88	55%	220
1.1.5	Processing & Accessioning	078	391	1	726	726	335	55%	1,320
1.2	Necropsy & Prep		2,623			4,841	2,218		\$ 5,104,909
1.2.1	Necropsy Receiving	082	801	1	363	363	-438	55%	660
1.2.2	Live Animal Holding	082	115	1	363	363	248	55%	660
1.2.3	Tissue Trimming / Formalin Prep	078A	117	1	242	242	125	55%	440
1.2.4	BSL-2 Necropsy	081	622	1	1,089	1,089	467	55%	1,980
1.2.5	Evidence Storage	082	90	1	121	121	31	55%	220
1.2.6	Photography & Drug Storage			1	242	242	242	55%	440
1.2.7	Outgoing Cooler	082A	94	1	182	182	88	55%	331
1.2.8	Incoming Cooler w/ nightdrop	082A	94	1	182	182	88	55%	331
1.2.9	Lockers, Shower, Gowning & Boot Room	079A, 080A	330	1	1,331	1,331	1,001	55%	2,420
1.2.10	Necropsy Storage			1	121	121	121	55%	220
1.2.11	Incinerator	082	360	1	484	484	124	55%	880
1.2.12	Formalin fixed storage		0	1	121	121	121	55%	220
1.3	Laboratory Sections & Support		5,668			12,043	6,375		\$ 9,121,364
<i>Clinical Pathology 1.3.1</i>									
1.3.1.1	Clinical Pathology Laboratory	088	382	1	726	726	344	55%	1,320
1.3.1.2	Clinical Pathology Equipment Room			1	121	121	121	55%	220
1.3.1.3	Clinical Pathology Microscopy Room			1	121	121	121	55%	220
<i>Histology 1.3.2</i>									
1.3.2.1	Histology Laboratory	096	409	1	726	726	317	55%	1,320
1.3.2.2	Histology Equipment Room	096A	65	1	182	182	117	55%	331
1.3.2.3	Histology Slide/Block Storage	067, 97A	152	1	363	363	211	55%	660
<i>Bacteriology 1.3.3</i>									
1.3.3.1	Bacteriology Laboratory	087	584	1	726	726	142	55%	1,320
1.3.3.2	Bacteriology Dirty Room	084	284	1	121	121	-163	55%	220
1.3.3.3	Bacteriology Microscopy			1	121	121	121	55%	220
1.3.3.4	Bacteriology Equipment	086	81	1	182	182	101	55%	331
<i>Virology 1.3.4</i>									
1.3.4.1	Virology Laboratory	090, 093	452	1	726	726	274	55%	1,320
1.3.4.2	Virology Fluorescent Microscopy	092	23	1	121	121	98	55%	220
1.3.4.3	Virology Equipment Room	091	90	1	182	182	92	55%	331
1.3.4.4	Virology Clean Room			1	121	121	121	55%	220
1.3.4.5	Virology Dirty Room			1	182	182	182	55%	331
<i>Serology 1.3.5</i>									
1.3.5.1	Serology Laboratory	094	608	1	726	726	118	55%	1,320
1.3.5.2	Serology Centrifuge & Liquid Handling			1	182	182	182	55%	331
1.3.5.3	Serology Equipment Room			1	182	182	182	55%	331
<i>Molecular Diagnostics 1.3.6</i>									
1.3.6.1	Molecular Diagnostics Sample Prep			1	363	363	363	55%	660
1.3.6.2	Molecular Diagnostics Extraction	116	346	1	363	363	17	55%	660
1.3.6.3	Molecular Diagnostics Clean Room	116B	181	1	182	182	1	55%	331
1.3.6.4	Molecular Diagnostics Amplification	112	257	1	182	182	-76	55%	330
1.3.6.5	Molecular Diagnostics Freezer Room			1	121	121	121	55%	220
1.3.6.6	Molecular Diagnostics Storage	116F	68	1	121	121	53	55%	220
<i>DNA Sequencing 1.3.7</i>									
1.3.7.1	DNA Sequencing Laboratory Suite			1	726	726	726	55%	1,320
<i>Milk 1.3.8</i>									
1.3.8.1	Milk Laboratory	095	603	1	1,089	1,089	486	55%	1,980
1.3.8.2	Milk Laboratory Equipment			1	363	363	363	55%	660
<i>Food Safety 1.3.9</i>									
1.3.9.1	Food Safety Laboratory			1	726	726	726	55%	1,320
1.3.9.2	Food Safety Sterilization & Equipment			1	121	121	121	55%	220
<i>Shared Laboratory Support 1.3.10</i>									
1.3.10.1	Sterilization, Glassware & Pure Water	73	717	1	726	726	9	55%	1,320
1.3.10.2	Media Prep Lab	073	100	1	121	121	21	55%	220
1.3.10.3	Biohazard Sterilization	075A	81	1	121	121	40	55%	220
1.3.10.4	Freezer Farm			1	363	363	363	55%	660
1.3.10.5	Hazardous Waste	082	115	1	242	242	127	55%	440
1.3.10.6	Laundry Room	075	70	1	121	121	51	55%	220
1.3.10.7	Chemical Storage			1	182	182	182	55%	330
1.4	Biocontainment		0			2,360	2,360		\$ 3,185,091
1.4.1	Lockers, Shower, Gowning & Boot Room			1	363	363	363	55%	660
1.4.2	Autoclave Sterilization			1	182	182	182	55%	331
1.4.3	Equipment Decontamination Airlock			1	121	121	121	55%	220
1.4.4	BSL-3 Laboratory			1	726	726	726	55%	1,320
1.4.5	BSL-3 Specialized Laboratory			2	121	242	242	55%	440
1.4.6	BSL-2 Enhanced Necropsy			1	726	726	726	55%	1,320
1.5	Office & Support		2,834			7,060	4,226		\$ 3,637,455
1.5.1	Reception and Waiting	077	570	1	800	800	230	55%	1,455
1.5.2	Director Office	083B	116	1	140	140	24	55%	255
1.5.3	Associate Director Office			1	120	120	120	55%	218
1.5.4	Administrative Conference Room			1	300	300	300	55%	545
1.5.5	Business Manager Office			1	120	120	120	55%	218
1.5.6	Quality Manager Office	097	215	1	120	120	-95	55%	218
1.5.7	Pathologist Office	083A, 114	256	4	120	480	224	55%	873
1.5.8	Open Office			25	60	1,500	1,500	55%	2,727

**State of Montana  
Combined State Lab Study  
June 6, 2018**



The  
Clark  
Enersen  
Partners

**Option 2A**

1.5.9	Library/Rounds Room	083	122	1	300	300	178	55%	545	\$ 280	\$ 152,727
1.5.10	Conference Room			2	120	240	240	55%	436	\$ 280	\$ 122,182
1.5.11	Multipurpose/Seminar Room	060	629	1	800	800	171	55%	1,455	\$ 300	\$ 436,364
1.5.12	Break Room	101	300	1	600	600	300	55%	1,091	\$ 300	\$ 327,273
1.5.13	Shipping			1	120	120	120	55%	218	\$ 300	\$ 65,455
1.5.14	Staff Lockers			1	300	300	300	55%	545	\$ 450	\$ 245,455
1.5.15	Storage	075	318	1	1,000	1,000	682	55%	1,818	\$ 250	\$ 454,545
1.5.16	Server Room	100	308	1	120	120	-188	55%	218	\$ 300	\$ 65,455
Subtotal - Veterinary Diagnostic Lab				11,549		27,877	16,328		50,685		\$ 21,989,318

**3.0 FWP WILDLIFE LAB**

Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost
3.1	FWP Wildlife Lab		2,992			4,554	1,562	8,280		\$ 3,356,309	
3.1.1	Reception & Open Office	470	1	242	242	-228	55%	440	\$ 280	\$ 123,200	
3.1.2	Director Office	90	1	140	140	50	55%	255	\$ 280	\$ 71,273	
3.1.3	Staff Office	272	2	120	240	-32	55%	436	\$ 260	\$ 113,455	
3.1.4	Open Ofce / Seasonal Labor	0	4	60	240	240	55%	436	\$ 260	\$ 113,455	
3.1.5	Break Room	0	121	0	0	0	55%	0	\$ 280	\$ -	
3.1.6	Work Room	1	121	121	121	121	55%	220	\$ 280	\$ 61,600	
3.1.7	Office Storage Room	1	121	121	121	121	55%	220	\$ 250	\$ 55,000	
3.1.8	Lockers, Shower, Gowning & Boot Room	280	0	484	0	-280	55%	0	\$ 550	\$ -	
3.1.9	Sample Prep	221	1	242	242	21	55%	440	\$ 400	\$ 176,000	
3.1.10	Necropsy	400	1	726	726	326	55%	1,320	\$ 750	\$ 990,000	
3.1.11	Holding Cooler	135	1	182	182	47	55%	331	\$ 500	\$ 165,455	
3.1.12	Holding Freezer	80	1	182	182	102	55%	331	\$ 550	\$ 182,000	
3.1.13	Molecular Diagnostics & DNA Sequencing		1	1,089	1,089	1,089	55%	1,980	\$ 400	\$ 792,000	
3.1.14	Laundry & Equipment Room	97	1	182	182	85	55%	331	\$ 300	\$ 99,273	
3.1.15	Laboratory Storage	565	1	484	484	-81	55%	880	\$ 320	\$ 281,600	
3.1.16	Garage	382	1	363	363	-19	55%	660	\$ 200	\$ 132,000	
Subtotal - FWP Wildlife Lab				2,992		4,554	1,562		8,280		\$ 3,356,309

SUMMARY	Existing NSF	14,541	Proposed NSF	32,431	17,890	Prop. GSF	58,965	Const. Cost	\$25,345,627
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CONSTRUCTION COST SUMMARY (New Building)		
<b>Building Costs</b>		
Building Construction		\$ 25,345,627
Sitework		\$ 2,000,000
Site Utilities		\$ 1,000,000
<b>Contingency</b>		
Design Contingency	10%	\$ 2,834,563
<b>Escalation from June 2018 to June 2020</b>		
Annual Escalation Rate	4%	\$ 2,544,303.50
<b>Construction Cost (New Building)</b>		
1. Construction Cost per GSF =		\$ 571.94
2. Not including FFE, A/V, design fees, commissioning, testing		

**Renovation in Marsh Lab Facility**

4.0 ANALYTICAL LAB						
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF
4.1	<b>Laboratories &amp; Support</b>		5,055		6,414	1,359
4.1.1	<i>Feed &amp; Fertilizer</i>					
4.1.1	Feed/Fertilizer Sample Prep	001A, 001B	545	1	484	484
4.1.2	Feed/Fertilizer Sample Prep & Balance	012	216	1	242	242
4.1.3	Feed/Fertilizer Chemistry Lab	019, 039	758	1	726	726
4.1.4	ICP Room	016, 016A	263	1	242	242
4.1.5	<i>Pesticide &amp; Groundwater</i>					
4.1.5	Pesticide Sample Prep	020	165	1	182	182
4.1.6	Low-Level Pesticide/Groundwater Laboratory	001C	442	1	484	484
4.1.7	Medium-Level Pesticide Laboratory	014	452	1	484	484
4.1.8	High-Level Pesticide Laboratory	031	150	1	242	242
4.1.9	Pesticide LCMS	024	248	1	484	484
4.1.10	<i>Shared Space</i>					
4.1.10	Feed/Fertilizer/Pesticide Lab	021, 038	649	1	726	726
4.1.11	Feed/Pesticide GCMS	025	354	1	484	484
4.1.12	Freezer/Standards Room	034	107	1	121	121
4.1.13	Oven Room	038A	29	1	242	242
4.1.14	Cooler Room	033	43	1	182	182
4.1.15	Secured Sample Storage			1	121	121
4.1.16	Hazardous Waste	032, 036	100	1	242	242
4.1.17	Chemical Storage	013	195	1	242	242
4.1.18	Receiving & Storage	001C	339	1	484	484
4.2	<b>Office &amp; Support</b>		1,653		1,463	-190
4.2.1	Receiving & Reception	010	367	1	363	363
4.2.2	Bureau Chief Office	009	215	1	140	140
4.2.3	Program Managers Office	011	161	1	140	140
4.2.4	Staff Office	023, 026	578	1	300	300
4.2.5	Office Work Room	010	111	1	120	120
4.2.6	Conference Room			1	200	200
4.2.7	Break Room	008	221	1	200	200
<b>Subtotal - Analytical Lab</b>			<b>6,708</b>		<b>7,877</b>	<b>1,169</b>
<b>6.0 PULSE LAB</b>						
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF
6.1	<b>Pulse Lab</b>		751		3,404	2,653
6.1.1	Sample Processing Laboratory	024	312	1	726	726
6.1.2	Molecular Biology Laboratory	021	287	1	726	726
6.1.3	Nematode Processing Laboratory			1	182	182
6.1.4	Germinator/Growth Chamber Room	038	42	1	182	182
6.1.5	Cold Room			1	121	121
6.1.6	Laboratory Storage			1	121	121
6.1.7	Greenhouse			1	484	484
6.1.8	Headhouse			1	242	242
6.1.9	Director Office	036	110	1	140	140
6.1.10	Staff Area			8	60	480
<b>Subtotal - Pulse Lab</b>			<b>751</b>		<b>3,404</b>	<b>2,653</b>

SUMMARY	Existing NSF	7,459	Proposed NSF	11,281	3,822	Const. Cost	\$4,442,213
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Prop. GSF    16,590    Const. Cost    \$4,442,213

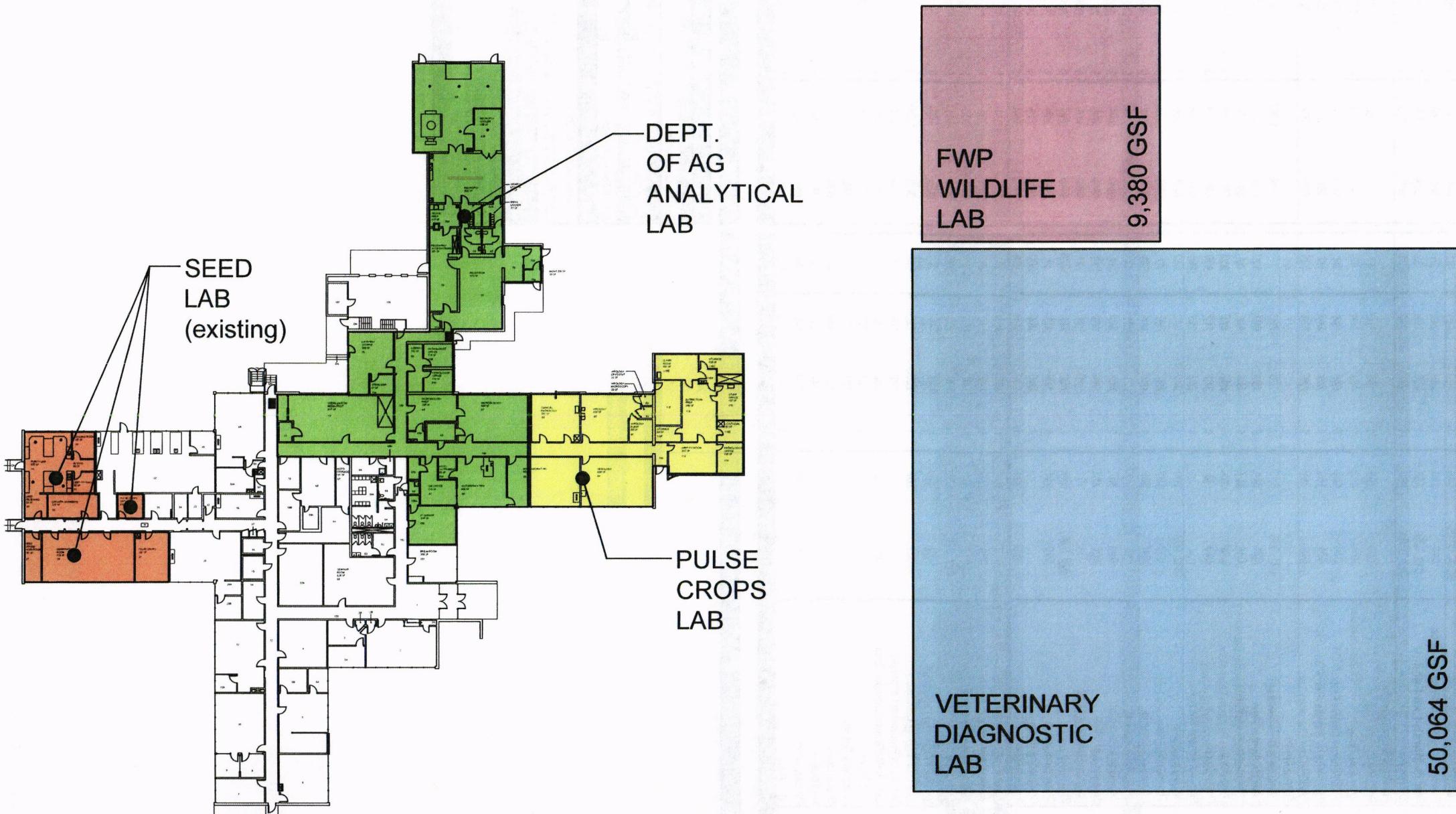
**CONSTRUCTION COST SUMMARY (Renovation)**

<b>Building Costs</b>	
Building Construction	\$ 4,442,213
<b>Contingency</b>	
Design Contingency	15%
	\$ 666,332
<b>Escalation from June 2018 to June 2021</b>	
Annual Escalation Rate	4%
	\$ 637,873.39
<b>Construction Cost (Renovation)</b>	\$ 5,746,419
1. Construction Cost per GSF =	\$ 346.38
2. Not including FFE, A/V, design fees, commissioning, testing	

**TOTAL PROJECT COST SUMMARY**

<b>Project Costs</b>	
Construction Cost - New Building	\$ 33,724,494
Construction Cost - Renovation	\$ 5,746,419
Project Associated Costs	25%
Total Project Cost	\$ 49,338,640

## Option 2A



## OPTION 2B

Option 2B is similar to Option 2A with the key difference being that the FWP Wildlife Lab remains where it is currently located and is not included in the new facility. The existing Wildlife lab is currently being renovated which should alleviate some of their space concerns, but the problems associated with transporting carcasses over to the VDL for incineration would remain. This option provides a new building that will house the Dept. of Livestock Veterinary Diagnostic Laboratory and continues with an identical renovation as that shown in Option 2A. The new building in this scenario is projected to have a total gross square footage of 50,685.

### VACATED SPACE

The following list shows the amount of net square footage that would be vacated and available for reuse under Option 2B. As previously stated, no costs have been provided for retrofit or repurposing of these facilities.

McCall Hall	6,708 nsf
Total	<b>6,708 nsf</b>

### CONSTRUCTION AND PROJECT COSTS

Line item costs for the new building shown in the attached room list for Option 2B were established in accordance with the Baseline Option as were the assumptions for site/utility costs, contingency and escalation. The line item costs for the renovation have been adjusted to account for the reuse of the existing shell, some corridor walls and other systems. The design contingency for all renovated spaces has been adjusted to 15% to account for unforeseen conditions and potential remediation. The construction of the new building has been escalated at 4% to an assumed mid-point of construction in the Summer of 2020 while the renovated areas have been escalated for one additional year to account for required phasing. As shown on the attached room list, Option 2B presently shows the construction cost for the new building at approximately \$29,135,000 and a renovation cost at approximately \$5,750,000. A project soft cost burden of 25% has been assumed bringing the total project costs for Option 2B to approximately \$43,600,000.



**LPW**  
ARCHITECTURE

The  
 Clark  
 Ehrensen  
 Partners

**Option 2B**

<b>SPACE SUMMARY</b>		<b>Existing Area (Net)</b>		<b>Proposed Area (Net)</b>		<b>Proposed Area (Gross)</b>		<b>Estimated Cost</b>									
<b>New Building</b>																	
<b>1.0 VETERINARY DIAGNOSTIC LAB</b>																	
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost						
1.1	Receiving/Accessioning		424			1,573	1,149		2,860	\$	940,500						
1.1.1	Walk-In Samples			1	363	363	363	55%	660	\$	300 \$	198,000					
1.1.2	Conference Room			1	242	242	242	55%	440	\$	300 \$	132,000					
1.1.3	Unisex Restroom			1	121	121	121	55%	220	\$	350 \$	77,000					
1.1.4	Delivery and Night Drop-Off Vestibule	076A	33	1	121	121	88	55%	220	\$	325 \$	71,500					
1.1.5	Processing & Accessioning	078	391	1	726	726	335	55%	1,320	\$	350 \$	462,000					
1.2	Necropsy & Prep		2,623			4,841	2,218		8,802	\$	\$	5,104,909					
1.2.1	Necropsy Receiving	082	801	1	363	363	-438	55%	660	\$	400 \$	264,000					
1.2.2	Live Animal Holding	082	115	1	363	363	248	55%	660	\$	400 \$	264,000					
1.2.3	Tissue Trimming / Formalin Prep	078A	117	1	242	242	125	55%	440	\$	450 \$	198,000					
1.2.4	BSL-2 Necropsy	081	622	1	1,089	1,089	467	55%	1,980	\$	750 \$	1,485,000					
1.2.5	Evidence Storage	082	90	1	121	121	31	55%	220	\$	400 \$	88,000					
1.2.6	Photography & Drug Storage			1	242	242	242	55%	440	\$	400 \$	176,000					
1.2.7	Outgoing Cooler	082A	94	1	182	182	88	55%	331	\$	500 \$	165,455					
1.2.8	Incoming Cooler w/ nightdrop	082A	94	1	182	182	88	55%	331	\$	500 \$	165,455					
1.2.9	Lockers, Shower, Gowning & Boot Room	079A, 080A	330	1	1,331	1,331	1,001	55%	2,420	\$	550 \$	1,331,000					
1.2.10	Necropsy Storage			1	121	121	121	55%	220	\$	400 \$	88,000					
1.2.11	Incinerator	082	360	1	484	484	124	55%	880	\$	900 \$	792,000					
1.2.12	Formalin fixed storage		0	1	121	121	121	55%	220	\$	400 \$	88,000					
1.3	Laboratory Sections & Support		5,668			12,043	6,375		21,896	\$	\$	9,121,364					
<i>Clinical Pathology 1.3.1</i>																	
1.3.1.1	Clinical Pathology Laboratory	088	382	1	726	726	344	55%	1,320	\$	400 \$	528,000					
1.3.1.2	Clinical Pathology Equipment Room			1	121	121	121	55%	220	\$	350 \$	77,000					
1.3.1.3	Clinical Pathology Microscopy Room			1	121	121	121	55%	220	\$	400 \$	88,000					
<i>Histology 1.3.2</i>																	
1.3.2.1	Histology Laboratory	096	409	1	726	726	317	55%	1,320	\$	400 \$	528,000					
1.3.2.2	Histology Equipment Room	096A	65	1	182	182	117	55%	331	\$	350 \$	115,818					
1.3.2.3	Histology Slide/Block Storage	067, 97A	152	1	363	363	211	55%	660	\$	350 \$	231,000					
<i>Bacteriology 1.3.3</i>																	
1.3.3.1	Bacteriology Laboratory	087	584	1	726	726	142	55%	1,320	\$	400 \$	528,000					
1.3.3.2	Bacteriology Dirty Room	084	284	1	121	121	-163	55%	220	\$	400 \$	88,000					
1.3.3.3	Bacteriology Microscopy			1	121	121	121	55%	220	\$	400 \$	88,000					
1.3.3.4	Bacteriology Equipment	086	81	1	182	182	101	55%	331	\$	350 \$	115,818					
<i>Virology 1.3.4</i>																	
1.3.4.1	Virology Laboratory	090, 093	452	1	726	726	274	55%	1,320	\$	400 \$	528,000					
1.3.4.2	Virology Fluorescent Microscopy	092	23	1	121	121	98	55%	220	\$	400 \$	88,000					
1.3.4.3	Virology Equipment Room	091	90	1	182	182	92	55%	331	\$	350 \$	115,818					
1.3.4.4	Virology Clean Room			1	121	121	121	55%	220	\$	400 \$	88,000					
1.3.4.5	Virology Dirty Room			1	182	182	182	55%	331	\$	400 \$	132,364					
<i>Serology 1.3.5</i>																	
1.3.5.1	Serology Laboratory	094	608	1	726	726	118	55%	1,320	\$	400 \$	528,000					
1.3.5.2	Serology Centrifuge & Liquid Handling			1	182	182	182	55%	331	\$	400 \$	132,364					
1.3.5.3	Serology Equipment Room			1	182	182	182	55%	331	\$	350 \$	115,818					
<i>Molecular Diagnostics 1.3.6</i>																	
1.3.6.1	Molecular Diagnostics Sample Prep			1	363	363	363	55%	660	\$	400 \$	264,000					
1.3.6.2	Molecular Diagnostics Extraction	116	346	1	363	363	17	55%	660	\$	400 \$	264,000					
1.3.6.3	Molecular Diagnostics Clean Room	116B	181	1	182	182	1	55%	331	\$	400 \$	132,364					
1.3.6.4	Molecular Diagnostics Amplification	112	257	1	182	182	-76	55%	330	\$	400 \$	132,000					
1.3.6.5	Molecular Diagnostics Freezer Room			1	121	121	121	55%	220	\$	350 \$	77,000					
1.3.6.6	Molecular Diagnostics Storage	116F	68	1	121	121	53	55%	220	\$	350 \$	77,000					
<i>DNA Sequencing 1.3.7</i>																	
1.3.7.1	DNA Sequencing Laboratory Suite			1	726	726	726	55%	1,320	\$	400 \$	528,000					
<i>Milk 1.3.8</i>																	
1.3.8.1	Milk Laboratory	095	603	1	1,089	1,089	486	55%	1,980	\$	400 \$	792,000					
1.3.8.2	Milk Laboratory Equipment			1	363	363	363	55%	660	\$	350 \$	231,000					
<i>Food Safety 1.3.9</i>																	
1.3.9.1	Food Safety Laboratory			1	726	726	726	55%	1,320	\$	400 \$	528,000					
1.3.9.2	Food Safety Sterilization & Equipment			1	121	121	121	55%	220	\$	600 \$	132,000					
<i>Shared Laboratory Support 1.3.10</i>																	
1.3.10.1	Sterilization, Glassware & Pure Water	73	717	1	726	726	9	55%	1,320	\$	750 \$	990,000					
1.3.10.2	Media Prep Lab	073	100	1	121	121	21	55%	220	\$	400 \$	88,000					
1.3.10.3	Biohazard Sterilization	075A	81	1	121	121	40	55%	220	\$	750 \$	165,000					
1.3.10.4	Freezer Farm			1	363	363	363	55%	660	\$	350 \$	231,000					
1.3.10.5	Hazardous Waste	082	115	1	242	242	127	55%	440	\$	400 \$	176,000					
1.3.10.6	Laundry Room	075	70	1	121	121	51	55%	220	\$	300 \$	66,000					
1.3.10.7	Chemical Storage			1	182	182	182	55%	330	\$	400 \$	132,000					
1.4	Biocontainment		0			2,360	2,360		4,291	\$	\$	3,185,091					
1.4.1	Lockers, Shower, Gowning & Boot Room			1	363	363	363	55%	660	\$	550 \$	363,000					
1.4.2	Autoclave Sterilization			1	182	182	182	55%	331	\$	650 \$	215,091					
1.4.3	Equipment Decontamination Airlock			1	121	121	121	55%	220	\$	650 \$	143,000					
1.4.4	BSL-3 Laboratory			1	726	726	726	55%	1,320	\$	800 \$	1,056,000					
1.4.5	BSL-3 Specialized Laboratory		2	121	242	242	242	55%	440	\$	800 \$	352,000					
1.4.6	BSL-2 Enhanced Necropsy		1	726	726	726	55%	1,320	\$	800 \$	1,056,000						
1.5	Office & Support		2,834			7,060	4,226		12,836	\$	\$	3,637,455					
1.5.1	Reception and Waiting	077	570	1	800	800	230	55%	1,455	\$	280 \$	407,273					
1.5.2	Director Office	083B	116	1	140	140	24	55%	255	\$	280 \$	71,273					
1.5.3	Associate Director Office			1	120	120	120	55%	218	\$	280 \$	61,091					
1.5.4	Administrative Conference Room			1	300	300	300	55%	545	\$	280 \$	152,727					
1.5.5	Business Manager Office			1	120	120	120	55%	218	\$	280 \$	61,091					
1.5.6	Quality Manager Office	097	215	1	120	120	-95	55%	218	\$	280 \$	61,091					
1.5.7	Pathologist Office	083A, 114	256	4	120	480	224	55%	873	\$	280 \$	244,364					
1.5.8	Open Office		25	60	1,500	1,500	1,500	55%	2,727	\$	260 \$	709,091					

**State of Montana**  
**Combined State Lab Study**  
**June 6, 2018**



**Option 2B**

1.5.9	Library/Rounds Room	083	122	1	300	300	178	55%	545	\$ 280	\$ 152,727
1.5.10	Conference Room			2	120	240	240	55%	436	\$ 280	\$ 122,182
1.5.11	Multipurpose/Seminar Room	060	629	1	800	800	171	55%	1,455	\$ 300	\$ 436,364
1.5.12	Break Room	101	300	1	600	600	300	55%	1,091	\$ 300	\$ 327,273
1.5.13	Shipping			1	120	120	120	55%	218	\$ 300	\$ 65,455
1.5.14	Staff Lockers			1	300	300	300	55%	545	\$ 450	\$ 245,455
1.5.15	Storage	075	318	1	1,000	1,000	682	55%	1,818	\$ 250	\$ 454,545
1.5.16	Server Room	100	308	1	120	120	-188	55%	218	\$ 300	\$ 65,455
Subtotal - Veterinary Diagnostic Lab				11,549		27,877	16,328		50,685		\$ 21,989,318

SUMMARY	Existing NSF	11,549	Proposed NSF	27,877	16,328	Prop. GSF	50,685	Const. Cost	\$21,989,318
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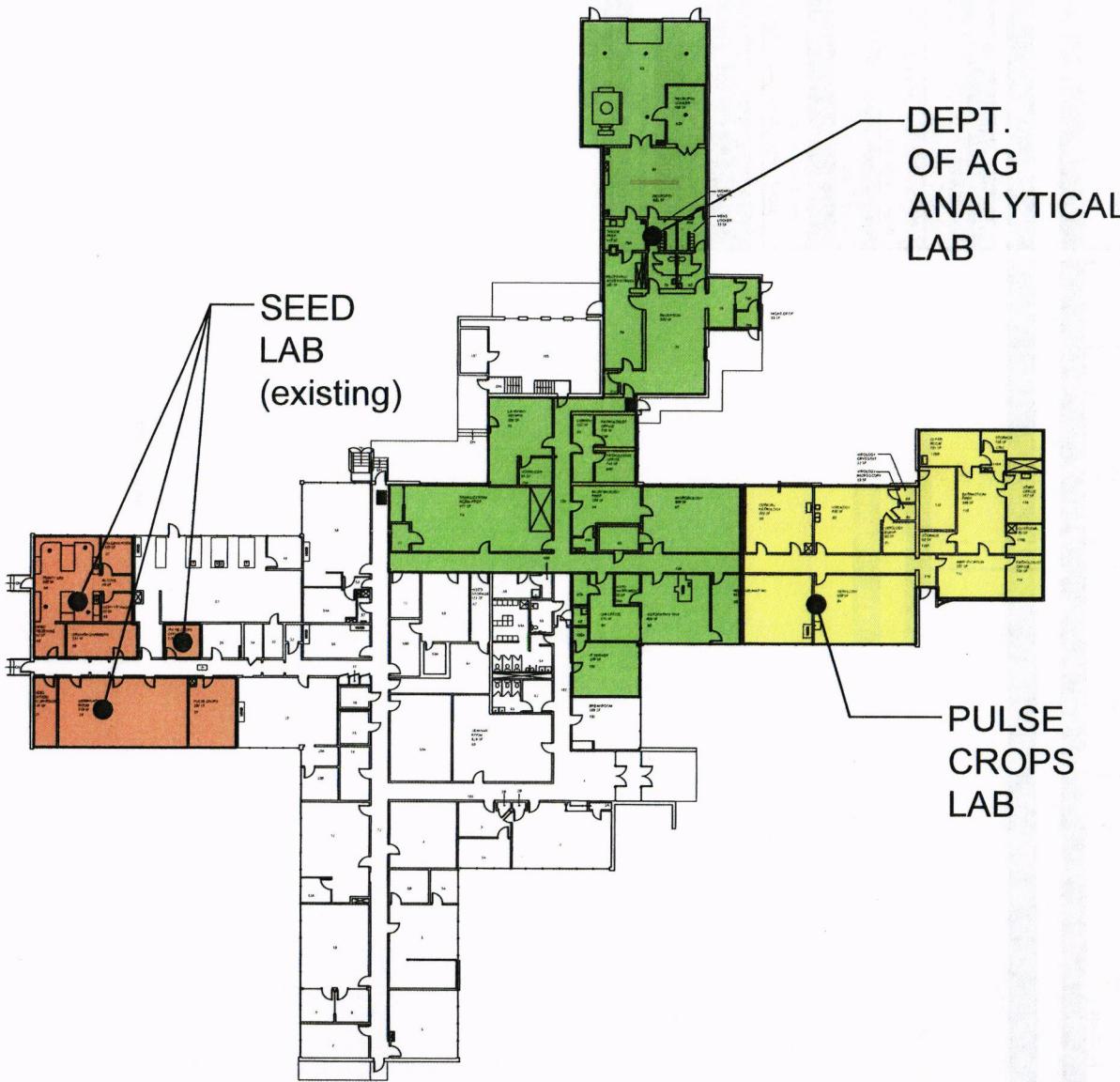
CONSTRUCTION COST SUMMARY (New Building)		
<b>Building Costs</b>		
Building Construction		\$ 21,989,318
Sitework		\$ 1,500,000
Site Utilities		\$ 1,000,000
<b>Contingency</b>		
Design Contingency	10%	\$ 2,448,932
<b>Escalation from June 2018 to June 2020</b>		
Annual Escalation Rate	4%	\$ 2,198,161.20
<b>Construction Cost (New Building)</b>		
1. Construction Cost per GSF =		\$ 574.85
2. Not including FFE, AV, design fees, commissioning, testing		

**Renovation in Marsh Lab Facility**

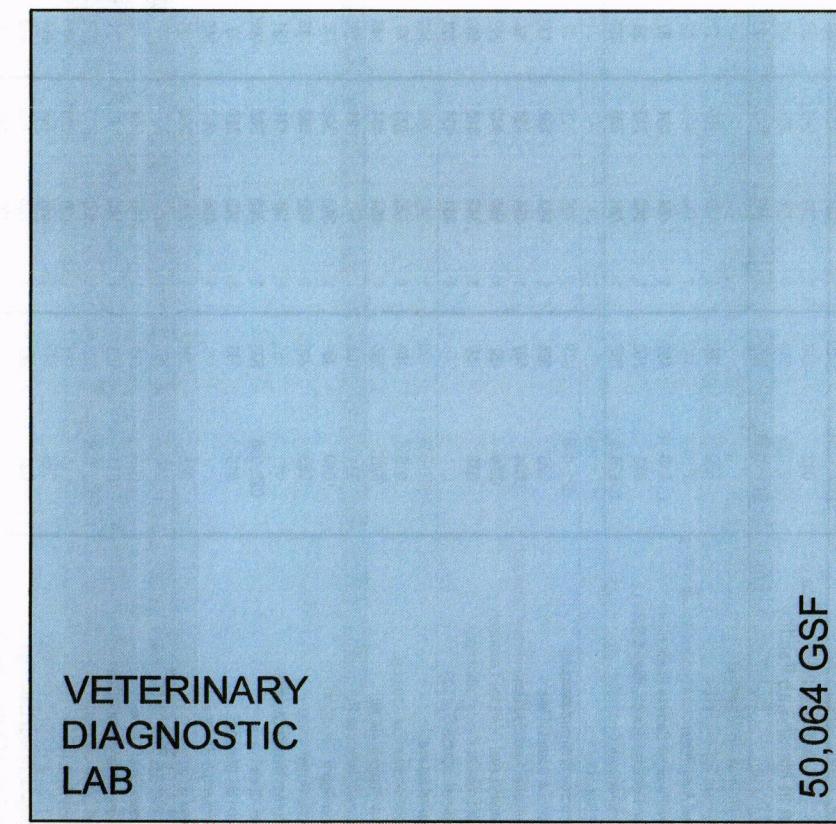
4.0 ANALYTICAL LAB												
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost	
4.1	<b>Laboratories &amp; Support</b>		5,055			6,414	1,359	9,432		\$	2,730,926	
4.1.1	<b>Feed &amp; Fertilizer</b>							68%	712	\$	285 \$	202,853
4.1.1	Feed/Fertilizer Sample Prep	001A, 001B	545	1	484	484	-61	68%	356	\$	285 \$	101,426
4.1.2	Feed/Fertilizer Sample Prep & Balance	012	216	1	242	242	26	68%	1,068	\$	300 \$	320,294
4.1.3	Feed/Fertilizer Chemistry Lab	019, 039	758	1	726	726	-32	68%	356	\$	320 \$	113,882
4.1.4	ICP Room	016, 016A	263	1	242	242	-21	68%	712	\$	227,765	
4.1.5	<b>Pesticide &amp; Groundwater</b>							68%	268	\$	285 \$	76,279
4.1.6	Pesticide Sample Prep	020	165	1	182	182	17	68%	712	\$	285 \$	202,853
4.1.6	Low-Level Pesticide/Groundwater Laboratory	001C	442	1	484	484	42	68%	712	\$	285 \$	202,853
4.1.7	Medium-Level Pesticide Laboratory	014	452	1	484	484	32	68%	712	\$	285 \$	202,853
4.1.8	High-Level Pesticide Laboratory	031	150	1	242	242	92	68%	356	\$	320 \$	113,882
4.1.9	Pesticide LCMS	024	248	1	484	484	236	68%	712	\$	320 \$	
4.1.10	<b>Shared Space</b>							68%	1,068	\$	285 \$	304,279
4.1.11	Feed/Fertilizer/Pesticide Lab	021, 038	649	1	726	726	77	68%	712	\$	320 \$	227,765
4.1.12	Feed/Pesticide GCMS	025	354	1	484	484	130	68%	178	\$	285 \$	50,713
4.1.13	Freezer/Standards Room	034	107	1	121	121	14	68%	356	\$	320 \$	113,882
4.1.14	Oven Room	038A	29	1	242	242	213	68%	268	\$	285 \$	76,279
4.1.15	Cooler Room	033	43	1	182	182	139	68%	178	\$	285 \$	50,713
4.1.16	Secured Sample Storage							68%	356	\$	285 \$	101,426
4.1.17	Hazardous Waste	032, 036	100	1	242	242	142	68%	356	\$	285 \$	101,426
4.1.18	Chemical Storage	013	195	1	242	242	47	68%	294	\$	285 \$	
4.1.18	Receiving & Storage	001C	339	1	484	484	145	68%	294	\$	200 \$	58,824
4.2	<b>Office &amp; Support</b>		1,653			1,463	-190	2,151		\$		337,426
4.2.1	Receiving & Reception	010	367	1	363	363	-4	68%	534	\$	150 \$	80,074
4.2.2	Bureau Chief Office	009	215	1	140	140	-75	68%	206	\$	150 \$	30,882
4.2.3	Program Managers Office	011	161	1	140	140	-21	68%	206	\$	150 \$	30,882
4.2.4	Staff Office	023, 026	578	1	300	300	-278	68%	441	\$	150 \$	66,176
4.2.5	Office Work Room	010	111	1	120	120	9	68%	176	\$	150 \$	26,471
4.2.6	Conference Room							68%	294	\$	150 \$	44,118
4.2.7	Break Room	008	221	1	200	200	-21	68%	294	\$	200 \$	
<b>Subtotal - Analytical Lab</b>			6,708			7,877	1,169	11,584		\$		3,068,353
6.0 PULSE LAB												
Number	Area	Room No.	NSF	Qty	NSF Ea.	NSF	NSF Diff.	Net-to-Gross	GSF	Cost/GSF	Cost	
6.1	<b>Pulse Lab</b>		751			3,404	2,653	5,006		\$	1,373,860	
6.1.1	Sample Processing Laboratory	024	312	1	726	726	414	68%	1,068	\$	250 \$	266,912
6.1.2	Molecular Biology Laboratory	021	287	1	726	726	439	68%	1,068	\$	275 \$	293,603
6.1.3	Nematode Processing Laboratory							68%	268	\$	275 \$	73,603
6.1.4	Germinator/Growth Chamber Room	038	42	1	182	182	140	68%	268	\$	275 \$	73,603
6.1.5	Cold Room							68%	178	\$	400 \$	71,176
6.1.6	Laboratory Storage							68%	178	\$	275 \$	48,934
6.1.7	Greenhouse							68%	712	\$	400 \$	284,706
6.1.8	Headhouse							68%	356	\$	350 \$	124,559
6.1.9	Director Office							68%	206	\$	150 \$	30,882
6.1.10	Staff Area	036	110	1	140	140	30	68%	706	\$	150 \$	105,882
<b>Subtotal - Pulse Lab</b>			751			3,404	2,653	5,006		\$	1,373,860	

<b>SUMMARY</b>	Existing NSF	7,459	Proposed NSF	11,281	3,822	Prop. GSF	16,590	Const. Cost	\$ 4,442,213
<b>CONSTRUCTION COST SUMMARY (Renovation)</b>									
<b>Building Costs</b>									
Building Construction									
\$ 4,442,213									
<b>Contingency</b>									
Design Contingency									
15% \$ 666,332									
<b>Escalation from June 2018 to June 2021</b>									
Annual Escalation Rate 4% \$ 637,873.39									
<b>Construction Cost (Renovation)</b>									
\$ 5,746,419									
1. Construction Cost per GSF = \$ 346.38									
2. Not including FFE, A/V, design fees, commissioning, testing									
<b>TOTAL PROJECT COST SUMMARY</b>									
<b>Project Costs</b>									
Construction Cost - New Building \$ 29,136,411									
Construction Cost - Renovation \$ 5,746,419									
Project Associated Costs 25% \$ 8,720,707.45									
<b>Total Project Cost</b>									
\$ 43,603,537									

## Option 2B



 MARSH LAB SCALE: 1" = 40'-0"



NEW BUILDING SCALE: 1" = 40'-0"